

*DIARIA BRITANNICA;*  
OR, THE  
BRITISH DIARY:  
A N  
*ALMANACK,*

FOR THE  
Year of OUR LORD 1789.

BEING THE FIRST AFTER  
*BISSEXTILE, or LEAP-YEAR.*

CONTAINING,  
A VARIETY of useful and entertaining MATTER in  
ARTS and SCIENCES:

Calculated, in a particular Manner, for the Improvement of  
the CURIOUS, in the more sublime Parts of the  
MATHEMATICS.

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The second Almanack published of this Kind.

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*Hail learned Friends, we have no ends, but learning doth adore,  
Your enigmas, and algebras, are laid up here in store;  
Works of merit, shall inherit, a crown of verdant bays,  
And laurels too, if they will do, t' insert for future days.*

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BIRMINGHAM,  
Printed and sold by *PEARSON* and *ROLLASON*,  
Price Nine-Pence stitched.

## Chronological Notes for the Year 1789.

The Julian period	6502	Septuagesima Sunday, Feb.	8
Golden number	4	Shrove Sunday, - - Feb.	22
Cycle of the Sun	6	Easter day - - - April	12
Epact - - - - -	3	Whit Sunday - - - May	31
Dominical letter	D	Trinity Sunday - - June	7
Number of direction	22	Advent Sunday - - Nov.	29
Roman Indiction	7	Years of the Millennium	133

## Astronomical CHARACTERS used in this DIARY.

♈ Aries	♋ Cancer	♎ Libra	♏ Capricorn
♉ Taurus	♌ Leo	♏ Scorpio	♐ Aquarius
♊ Gemini	♍ Virgo	♏ Sagittary	♑ Pisces.
♄ Saturn	☉ Sun	☾ Moon	☿ Tellus
♃ Jupiter	♀ Venus	♊ North Node	Terra
♂ Mars	☿ Mercury	♋ South Node	or the Earth.
♌ Conjunction, when Planets are in the same sign, D, m.			
* Sextile, when 2 signs dist.		Δ Trine, when 4 signs dist.	
□ Quartile, when 3 signs dist.		8 Opposition, or 6 signs dist.	

## Of the Four Quarters of the Year.

Spring Quarter begins March 20, at 53 m. past 3 morn.  
 Summer Quarter begins June 21, at 55 m. past 1 morn.  
 Autumn Quarter begins Sept. 22, at 28 m. past 7 aftern.  
 Winter Quarter begins Decem. 21, at 59 m. past 3 morn.

Beautiful VENUS will be a morning star till May 30, at which time she becomes an evening star to the year's end.

JUPITER will be a morning star till Jan. 14, when he becomes occidental or an evening star to the year's end.

## ECLIPSES for the YEAR 1789.

IN the course of this year, the inhabitants of this earthly globe, may observe four eclipses of the two luminaries, namely, two of the Sun and two of the Moon, whereof but one only of the Moon will be visible to the inhabitants of Great-Britain; they happen according to the following order and computation.

The first is an invisible eclipse of the Moon on Saturday the 9th of May, in the morning; the beginning of the eclipse at 8h. 38m. middle at 9h. 31m. and the end at 10h.

10h. 24m.—duration 1h. 46m. and the Digits eclipsed are 2 deg. 54m. on the Moon's northern limb.

The second is an invisible eclipse of the greater luminary the Sun, on Sunday the 24th day of May; the conjunction at 10h. 21m. in  $11^{\circ} 4' 3''$ , the Moon's latitude  $30' 30''$  south; the Sun will be centrally eclipsed on the meridian at 10h. 18m. in longitude  $154^{\circ} 30'$  west, and latitude  $11^{\circ} 15'$  south.

The third is a visible eclipse of the lesser luminary, the moon, on Monday the 2d of November, about midnight, but more particularly, according to the following calculation.

November the second the moon she will be,

A small part eclipsed in obscurity;

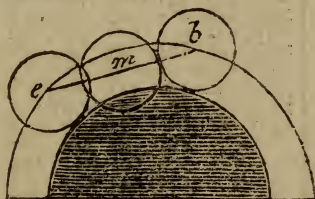
Late in the night, if the sky be but clear,

By good computation it will thus appear

	h.	m.	s.
Begins, <i>p W. Swift</i>	11	31	58
Middle of the eclipse	12	30	59
End next morning	1	32	49

The same from our M. S. tables

	h.	m.	s.
Beginning	11	25	21
Middle next morn.	12	29	57
End of the eclipse	1	34	33
Duration	2	9	12
Digits eclipsed	3	50	23

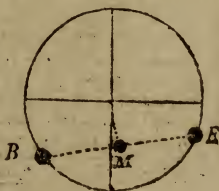


on the moon's southern limb.

The fourth and last is an invisible eclipse of the sun, on Tuesday the 17th day of November, in the morning, the conjunction being at 3h. 29m. in  $m 25^{\circ} 16'$ , Moon's lat.  $33'$  north. Sun will be centrally eclipsed on the meridian at 3h. 22m. in long.  $129^{\circ} 30'$  east, and lat.  $14^{\circ} 45'$  north.

Besides the luminary eclipses there will happen, on the 5th of November, in the afternoon, a most famous and remarkable Transit of Mercury, over the Sun's disc, as under:

	h.	m.	s.
Mercury's first contact	1	8	8
Central ingress	1	10	0
Total immersion	1	11	52
Middle of the transit	3	37	0
Begins to emerge	6	2	8
Central egress	6	4	0
End of the transit	6	5	52



*A TABLE of the MOON's southing, or Times when she passes the Meridian of Greenwich Observatory, for the Year 1789.*

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
1	3 a 40	4 19	3 54	3 38	5 27	6 51	7 18	8 43	10 0	10 19	11 12	11 25
2	4 22	5 6	3 54	5 34	6 21	7 43	8 9	9 34	10 44	11 0	11 59	morn
3	5 3	5 56	4 45	0 30	7 13	8 34	9 2	10 23	11 27	11 42	morn	0 17
4	5 46	6 49	5 39	7 26	8 59	9 26	9 56	11 10	morn	morn	0 a 48	1 11
5	6 32	7 46	6 35	8 21	8 57	10 20	10 49	11 56	0 10	0 26	1 39	2 6
6	7 21	8 47	7 33	9 15	9 49	11 14	11 40	morn	0 52	1 11	2 31	3 0
7	8 14	9 46	8 31	10 8	10 43	morn	morn	0 40	1 34	1 58	3 24	3 53
8	9 11	10 45	9 28	11 2	11 38	0 8	0 29	1 22	2 18	2 47	4 17	4 44
9	10 10	11 43	10 25	11 57	morn	1 1	1 16	2 43	4 3	4 38	5 10	5 35
10	11 13	morn	11 20	morn	0 33	1 52	2 02	4 6	5 24	5 36	6 25	6 25
11	morn	0 40	morn	0 52	1 28	2 41	2 43	3 29	4 42	5 25	6 55	7 17
12	0 13	1 34	0 15	1 47	2 22	3 27	3 25	4 13	5 35	6 20	7 47	8 8
13	1 11	2 27	1 9	2 43	3 14	4 10	4 6	5 06	6 29	7 14	8 39	9 2
14	2 7	3 20	2 4	3 38	4 4	5 4	4 48	5 49	7 25	8 9	9 32	9 57
15	3 04	4 13	2 59	4 31	5 51	6 33	5 31	6 41	8 21	9 2	10 27	10 53
16	3 52	5 3	3 54	5 21	6 36	7 15	6 16	7 36	9 17	9 56	11 24	11 50
17	4 42	5 58	4 48	6 9	7 19	8 57	7 48	9 32	10 13	10 50	a 21	a 44
18	5 32	6 50	5 40	6 55	7 07	9 43	7 56	9 30	11 8	11 46	1 18	1 36
19	6 23	7 41	6 31	7 39	7 42	8 30	8 51	10 26	0 a 4	0 a 44	2 14	2 25
20	7 14	8 30	7 20	8 21	8 25	9 21	9 48	11 25	1 1	1 42	3 8	3 11
21	8 59	10 18	8 7	9 39	9 10	10 15	10 47	0 a 22	1 57	2 39	3 58	3 55
22	9 56	10 38	8 52	9 45	9 56	11 11	11 46	1 18	2 54	3 35	4 54	4 57
23	10 46	10 47	9 35	10 28	10 45	0 a 9	0 a 44	2 13	3 50	4 29	5 30	5 18
24	10 35	11 29	10 17	11 13	11 37	1 7	1 39	3 7	4 45	5 20	6 13	6 0
25	11 22	0 a 11	10 59	0 a 1	0 a 32	2 4	2 33	4 15	5 39	6 8	6 55	6 42
26	0 a 6	0 53	11 41	0 52	1 29	2 59	3 26	4 56	6 31	6 54	7 36	7 26
27	0 48	1 35	0 a 25	1 45	2 26	3 52	4 18	5 51	7 21	7 38	8 18	8 12
28	1 30	2 19	1 12	2 40	3 22	4 43	5 11	6 44	8 8	8 20	9 19	9 1
29	2 11	3 0	1 59	3 36	4 17	5 34	6 4	7 36	8 53	9 29	10 47	9 52
30	2 53	3 42	2 50	4 32	5 10	6 25	7 57	8 26	9 37	10 44	10 35	10 46
31	3 35	4 23	3 43	5 6	6 1	7 17	8 50	9 14	10 27	11 0	11 42	11 42

*A TABLE of the Seven Stars southing, or Times when they pass the Meridian.*

	A.	A.	A.	A.	A.	M.	M.	M.	M.	M.	M.	A.
1	8 43	6 31	4 43	2 50	0 59	10 56	8 52	6 48	4 53	3 51	9 11	0
2	8 17	6 7	4 20	2 28	0 36	10 31	8 27	6 25	4 31	2 43	8 45	10 34
3	7 51	5 44	3 58	2 7	0 12	10 7	8 46	6 24	4 10	2 21	8 20	10 8
4	7 25	5 20	3 36	1 44	11 49	9 42	7 39	5 49	3 48	1 59	7 51	9 41
5	7 04	5 8	3 15	1 22	11 25	9 17	7 14	5 18	3 27	1 36	7 26	9 14

*Use of the Tables. To find the Time of High Water.*

		<i>No. of Stars.</i>	<i>h. a. 7. f. d. a.</i>
EXAM. On Jan. 1st Moon souths at	3 40 a.	Aldebaran	0 40 7 29
Add for N. and F. Moon for London	2 30	Capella	1 26
<i>Time of High Water at London, afte.</i>	6 10 &c	Rigel	1 29 5 20
		Betelgeuse	2 8 6 41
Ex. 1.) On Jan. 1, Seven Stars souths at	8 43 a.	Sirius	3 14 3 37
Semidiurnal arc. subtract and add	8 17	Regulus	6 21 7 11
Seven Stars rises Aft. Jan. 1st	0 26 a.	Upp. point	7 35
Seven Stars sets next morning Jan. 2,	5 0 m.	Virg. spike	9 39 5 12
Ex. 2.) Seven Stars souths Jan. 1st at	8 43 a.	Arcturus	10 29 7 55
Sirius souths after the Seven Stars	3 1	Antarus	12 41 3 34
Sirius south Jan. 1st afternoon	11 44 a.	Lyra	14 52
		Fomalhaut	19 8 2 52

1789.

JANUARY hath XXXI Days.

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	D	☉ de.	☿ de.	♂ de.	♀ de.	♂ de.
First Quart. 4 day, 4 after.		fouth	fouth	north	fouth	fouth
Full Moon 11 day, 6 night	1	22 57	10 42	21 16	23 55	19 28
Last Quart. 18 day, 9 morn.	7	22 17	10 30	21 26	23 30	20 48
New Moon 26 day, 6 morn.	13	21 21	10 16	21 36	22 56	21 47
	19	20 11	10 22	21 45	22 13	22 24
	25	18 46	9 47	21 54	21 20	22 37

M	W	Festival Days.	Aspects & Weather.	D	☉	☿	♂	♀	♂	♀	D	D de.
D	D			fets.	☿	☿	☿	☿	☿	☿	☿	fouth
1	T	Circumcif.	♂ D ☿	9 38	11 38	7 27	11 5	20 6	31 4	10		
2	F		☿ ☿ ♀	10 38	12 39	7 26	11 7	18 25	on 6			
3	S		Snow, or	11 43	13 41	7 26	12 8	2 0	25 4	32		
4	D	2 S. af. Chr.	cold rain,	Morn	14 42	7 26	13 9	3 12	37 8	53		
5	M	Old Chr. d.	with brisk	0 49	15 43	7 26	14 10	5 25	5 12	57		
6	T	Epiphany	* ☿ ☿	1 57	16 44	7 26	14 12	7 8	53 16	33		
7	W		winds.	3 6	17 45	7 26	15 13	8 21	6 19	27		
8	T	Lucian		4 15	18 46	7 26	16 14	9 4	11 46	21	20	
9	F			5 19	19 48	8 26	17 15	11 18	55 21	57		
10	S		Rain about	6 15	20 49	8 25	17 16	13 3	30 21	8		
11	D	1 S. af. Epi.	♂ D ☿	D rif.	21 50	8 25	18 18	14 18	26 18	40		
12	M	Plow Mon.	O. N. Y. d.	5 35	22 51	8 25	19 19	16 3	36 15	12		
13	T	Hil. C. T. b.	these days.	7 15	23 52	8 25	20 20	17 18	48 10	34		
14	W	Ox. T. beg.	☿ ☉ ☿	8 37	24 53	8 25	21 21	19 3	53 5	20		
15	T		☿ ☿ ☿	9 59	25 54	8 25	21 23	21 18	41 0	8		
16	F		Wind and	11 16	26 55	8 25	22 24	22 3	7 5	27		
17	S		☿ ☿ ☿	Morn	27 56	8 24	23 25	24 17	7 10	20		
18	D	2 S. af. Epi.	Q. birthd.	0 32	28 57	8 24	24 26	25 0	41 14	32		
19	M		Prisca.	1 44	29 58	9 24	24 28	27 13	51 17	54		
20	T	Fabian. 1re.	rain for	2 53	30 59	9 24	25 29	29 26	41 20	17		
21	W	Agnes	some days.	3 56	2 0	9 24	26 30	3 9	44 21	37		
22	T	Vincent	♂ D ♀	4 50	3 2	9 24	27 1	2 21	33 21	52		
23	F	Hil. T. beg.	☿ ☉ ☿	5 37	4 3	9 24	28 2	4 3	44 21	5		
24	S		Snow or	6 15	5 4	9 24	28 4	6 15	47 19	20		
25	D	3 S. af. Epi.	C. St. Paul	6 56	6 5	9 23	29 5	7 27	45 16	45		
26	M		♂ D ♀	D fets	7 6	9 23	30 6	9 9	30 13	20		
27	T	2 ret. P. Au.	F. b. 1773	6 10	8 6	9 23	1 7	11 21	32 9	42		
28	W		♂ D ☿	7 14	9 7	10 23	1 9	13 3	24 5	34		
29	T		* ☿ ☿	8 18	10 8	10 23	2 10	14 15	16 1	14		
30	F	K. Ch. I. M.	1648. rain	9 23	11 9	10 23	3 11	16 27	12 3	11		
31	S		to the end.	10 29	12 10	10 23	4 12	18 9	13 7	30		

D	D. L	Sun beg.	Sun rise	Sun fet.	D. L	eng. of D.	Day inc.	Clock be. ☉	☿	♂	♀	♂	♀
									fets.	fouth	rife.	rife.	☿ 4
1	5	52	8 2	3 58	6	8	7 56	0 6	4 23	8 a 55	1 m 7	8 m 5	5 m 8
7	5	48	7 57	4 3	6	12	8 6	0 16	7 48	8 31	0 37	7 56	5 21
13	5	44	7 51	4 9	6	16	8 18	0 28	9 27	8 8	0 8	7 46	5 33
19	5	30	7 44	4 17	6	22	8 33	0 43	11 25	7 46	11 34	7 36	5 42
25	5	33	7 36	4 25	6	28	8 40	0 50	12 58	7 25	11 57	24 5	5 41

		D	☉ de.	☿ de.	♂ de.	♀ de.	♂ de.	♀ de.	☿ de.	♂ de.
		fouth	fouth	north	fouth	fouth	fouth	fouth	fouth	fouth
First Quart. 3 day, 9 morn.										
Full Moon 19 day, 4 morn.		1	16 53	9 29	22 4	20 9	22 22	16 43		
Last Quart. 16 day, 10 night		7	15 49	13 22	11 18	58 21	43 12	33 12		
New Moon 25 day, 1 morn.		13	13 68	57 22	17 17	41 20	41 7	49 7		
		19	11 08	40 22	22 16	16 19	16 3	17 17		
		25	8 48	8 24	22 26	14 45	17 31	0 7		
M	W	Festival Days:	Aspects & Weather.	D fets.	☉	☿	♂	♀	☿	D de.
D	D				☉	☿	♂	♀	☿	north
1	D	S. af. Epi.		11 33	13 11	10 23	5 14	20 21	24 11	35
2	M	Pur. or C.d.	Seasonable	Morn	14 12	10 22	5 15	21 3	8 47	15 16
3	T	Blase. 3 ret.	weather.	0 43	15 13	10 22	6 16	23 16	29 18	19
4	W			1 40	16 13	10 22	7 17	25 29	33 20	33
5	T	Agatha.		2 53	17 14	10 22	8 18	27 13	11 32	21 41
6	F			3 53	18 15	11 22	9 20	29 27	21 32	32
7	S		♂ D 24	4 44	19 16	11 22	9 21	31 11	30 19	58
8	D	Septuages.	♂ 24 ♀	5 28	20 16	11 22	10 22	2 26	24 17	1
9	M	4 return	R: in or	6 4	21 17	11 22	11 23	4 11	30 12	52
10	T	Dies Sco. O.	snow, with	D rif.	22 17	11 22	12 25	6 27	0 7	51
11	W		brisk	7a25	23 18	11 21	12 26	7 12	19 3	22
12	T	Hil. T. ends	winds and	8 48	24 19	11 21	13 27	9 27	25 3f	12
13	F		♂ h ♀	10 8	25 19	11 21	14 28	11 12	6 8	25
14	S	Valentine	winterly	11 26	26 20	12 21	15 3	12 26	20 13	2
15	D	Sexagesima	weather.	Morn	27 20	12 21	16 1	14 10	3 16	46
16	M			0 38	28 21	12 21	16 2	15 23	17 19	30
17	T			1 44	29 21	12 21	17 3	17 6	7 21	0
18	W			2 48	30 22	12 21	18 5	18 18	36 21	4
19	T		Wind with	3 33	1 22	12 21	19 6	19 19	50 21	10
20	F		snow or	4 13	2 22	12 21	20 7	20 12	53 19	40
21	S	C. T. di. m.	Δ 24 ♀	4 40	3 23	12 21	20 8	21 24	47 17	20
22	D	Qui. Shr. S.	♂ D ♀	5 17	4 23	12 21	21 10	22 6	41 14	17
23	M	Pr. Octa. b.	♂ D ♂	6 2	5 23	13 20	22 11	23 18	32 10	42
24	T	St. Matt. Pr.	A. F. b. S. T	D fets	6 24	13 20	23 12	24 6	24 6	41
25	W	Ash-Wedn.	♂ D h	6a13	7 24	13 20	23 13	24 12	18 2	24
26	T	Ca. C. B. A.	♂ D ♀	7 15	8 24	13 20	24 14	24 15	15 15	58
27	F		rain to the	8 10	9 24	13 20	25 16	24 6	17 6	18
28	S	Hare-hunt- ling ends.	end.	9 26	10 24	13 20	26 17	18 13	25 10	26

D	D. I.	Sur	Sur	D. I.	leng.	Day	Clock	h	24	♂	♀	♂
	beg.	rife	fet.	ends	of D.	inc	be. ☉	fets.	fouth	rife.	rife.	♂
1	5 24	7 24	4 37	6 37	9 13	1 23	14 9	7 a 1	10a33	7m10	5m58	4 18
7	5 15	7 14	4 47	6 40	9 33	1 43	14 37	6 41	10 6	6 56	6 23	58 23
13	5 57	7 34	4 58	6 56	9 55	2 5	14 36	6 21	9 40	6 47	6 33	39 33
19	4 55	6 52	5 9	7 6	10 17	2 27	14 6	6 2	9 15	6 34	6 23	20 23
25	4 45	6 41	5 20	7 16	10 30	2 46	13 18	5 43	8 51	6 20	5 57	3 1

## MARCH hath XXXI Days.

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	D	☉ de.	☿ de.	♈ de.	♉ de.	♊ de.	♋ de.	♌ de.
		fouth	fouth	north	fouth	fouth	north	
First Quart. 4 day, 11 night	1	7 18	8 12	22 27	13 42	16 11	9 39	
Full Moon 11 day, 2 after.	7	4 59	7 56	22 29	12 3	13 58	0 34	
Last Quart. 18 day, 2 after.	13	2 38	7 40	22 30	10 20	11 31	3 20	
New Moon 26 day, 7 night	19	0 16	7 22	22 30	8 34	8 53	6 5	
	25	2 n 6	7 7	22 20	6 45	6 7	7 25	

M	W	Festival Days.	Aspects & Weather.	D fets.	☉	☿	♈	♉	♊	♋	♌	D de.	D de.
D	D				☿	☿	☿	☿	☿	☿	☿	☿	north
1	D	1 S. in Lent	St. David	10 34	11 25	13 20	27 18	24 0	42 14	10			
2	M	Chad	Snow or	11 40	12 25	13 20	27 19	24 13	9 17	20			
3	T		rain, with	Morn	13 25	14 20	28 21	23 25	51 19	45			
4	W	Emb. Week	♂ ☉ ♀	0 45	14 25	14 20	29 22	23 8	52 21	11			
5	T		brisk winds	1 44	15 25	14 20	30 23	22 22	14 21	28			
6	F		Δ ♀ ☿	2 37	16 25	14 20	1 24	21 6	5 20	29			
7	S	Perpetua	♂ ☿ ♀	3 23	17 25	14 20	1 26	20 20	15 18	12			
8	D	2 S. in Lent	♂ ☉ ♀	4 1	18 24	14 20	2 27	19 4	54 14	41			
9	M		and stormy	4 34	19 24	14 20	3 28	18 19	53 10	11			
10	T		Δ ☉ ♀	5 4	20 24	14 20	4 29	17 5	5 4	50			
11	W		Variable	D ril.	21 24	15 20	4 30	16 20	19 0	32			
12	T	Gregory M.	♂ ♀ ☿	7 36	22 23	15 20	5 2	15 5	24 5	56			
13	F		weather	9 1	23 23	15 20	6 3	15 20	11 10	57			
14	S		for the	10 23	24 23	15 20	7 4	14 4	32 15				
15	D	3 S. in Lent	most part.	11 33	25 22	15 20	8 5	13 18	25 18	22			
16	M		Morn	26 22	15 D	8	7 12	1 4	40 20	27			
17	T	St. Patrick		0 38	27 22	15 20	9 8	12 14	44 21	22			
18	W		♂ ♂ ☿	1 31	28 21	15 20	10 9	11 27	17 21				
19	T		♂ ♂ ☿	2 17	29 21	16 20	11 10	11 9	33 19	50			
20	F	Cuthbert	♂ ♂ ♀	2 54	30 20	16 20	12 12	11 21	30 17	50			
21	S	Benedict	Wind and	3 25	1 20	16 20	12 13	11 3	30 15				
22	D	Midl. Sun.	rain, with	3 52	2 19	16 20	13 14	D 15	21 11	34			
23	M		♂ ♀ ☿	4 17	3 18	16 20	14 15	11 27	11 7	42			
24	T		♂ ☿ ♀	4 36	4 18	16 20	15 17	11 9	3 3	32			
25	W	An. Lady-d.	Fox-h. end	4 56	5 17	16 20	15 18	11 21	3 0	48			
26	T	Cam. lat. act	♂ ♀ ♂	D fets	6 16	16 20	16 19	11 3	7 5				
27	F		Δ ♀ ♀	7 25	7 16	16 20	17 20	12 15	20 9	20			
28	S		thunder	8 32	8 15	17 20	18 22	12 27	40 13	10			
29	D	5 S. in Lent	in some	9 39	9 14	17 20	19 23	13 10	8 16	20			
30	M		places.	10 45	10 13	17 20	19 24	13 22	51 19				
31	T		Δ ♀ ♂	11 46	11 12	17 20	20 25	14 5	45 20	44			

D	D. L.	Sun beg.	Sun rise	Sun fet.	D. L.	leng. of D.	Day inc.	Clock be.	☉	♈	♉	♊	♋	♌
										rife.	fouth	rife.	rife.	☿
1	4	37	632	529	7	24	10	57	13	7	12	33	6m 49	8a 35
7	4	25	621	540	7	30	11	19	13	26	11	10	6 26	8 12
13	4	12	6 9	552	7	49	11	43	13	53	9	33	6 57	50 5
19	3	59	557	6 4	8	2	12	7	4	17	7	47	5 43	7 28
25	3	45	545	6 10	8	16	12	31	4	41	5	56	5 22	7 6

1789.

8

APRIL hath XXX Days.

	D	☉ de. north	☿ de. south	♂ de. north	♂ de. south	♀ de. south	♂ de. south
First Quart. 3 day, 9 morn.							
Full Moon 9 day, 11 night	1	4 49	6 47	22 27	4 35	2 45	7 12
Last Quart. 17 day, 8 morn.	7	7 6	6 32	22 23	2 43	0 n 12	5 44
New Moon 25 day, 10 morn.	13	9 18	6 18	22 19	0 51	3 9	3 18
	19	11 25	6 4	22 14	1 n 1	6 4	0 3
	25	13 25	5 50	22 8	2 53	3 54	3 n 53

M	W	Festival Days.	Aspects & Weather.	☉ fets.	☿ ☿	♂ ♂	♂ ♂	♀ ♀	♀ ♀	☿ ☿	☿ ☿
1	W	All Fool's	Windy	Morn	12 11	17 20	21 27	15 18	53	21 17	
2	T		with	0 41	13 10	17 20	22 28	16 25	18	20 39	
3	F	Richard	☉ ☿ ☿	1 28	14 9	17 20	23 29	17 16	2	18 47	
4	S	St. Ambrose	☉ ☿ ☿	2 7	15 8	17 20	23 29	17 16	0 n	5 15	46
5	D	6 S. in Lent	Palm Sun.	2 41	16 7	18 20	24 1	18 14	27	11 45	
6	M	[Old L.D.	showers	3 11	17 6	18 21	25 3	19 29	4 6	58	
7	T		☿ ☿ ☿	3 38	18 5	18 21	26 4	21 13	53	1 44	
8	W		of rain	4 4	19 4	18 21	26 5	22 28	40	3 37	
9	T	Maunday	and mixt	4 31	20 3	18 21	27 6	23 13	33	8 45	
10	F	Good Frid.	☉ ☿ ☿	☿ rif.	21 1	18 21	28 8	24 28	8	13 18	
11	S		weather	9 a 18	22 0	18 21	29 9	25 12	m 23	16 59	
12	D	Easter day	for the	10 27	22 59	18 21	☿ 10	27 26	15	19 34	
13	M	Easter Mon.	not part.	11 28	23 57	18 21	0 11	28 9	41	20 57	
14	T	Easter Tue.		Morn	24 56	19 21	1 13	29 22	42	21 10	
15	W			0 21	25 55	19 21	2 14	☿ 5	21	20 16	
16	T			1 0	26 53	19 21	3 15	2 17	41	18 24	
17	F		☉ ☿	1 33	27 52	19 21	3 16	3 29	47	15 40	
18	S			2 3	28 50	19 22	4 17	3 11	44	12 30	
19	D	1 S. af. East.	Alphege	2 26	29 49	19 22	5 18	4 23	37	8 40	
20	M		Spring	2 48	8 47	19 22	6 20	5 37	29	4 42	
21	T		weather.	3 8	1 46	19 22	7 21	6 17	25	0 20	
22	W	O. & C. T. b.	☉ ☿ ☿	3 28	2 44	19 22	7 22	11 29	27	3 n 54	
23	T	St. George	☉ ☿ ☿	3 49	3 42	19 22	8 24	12 11	☿ 40	8 8	
24	F		☉ ☿ ☿	4 12	4 41	20 22	9 25	14 24	3	12 0	
25	S	St. Mar. Pr.	Mary bor	☿ fets	5 30	20 22	10 26	16 6	8 30	15 36	
26	D	2 S. af. East.	[1776	8 a 40	6 37	20 22	10 27	17 19	27	18 24	
27	M	1 return	Wind and	9 46	7 36	20 23	11 29	19 2	11 29	20 20	
28	T		rain.	10 43	8 34	20 23	12 8	21 15	44	21 0	
29	W	East. T. be.	☉ ☿ ☿	11 32	9 32	20 23	13 1	23 29	11	20 47	
30	T		☉ ☿ ☿	Morn	10 30	20 23	13 2	24 12	51	19 11	

D	D. L.	Sun.	Sun.	D. L.	leng.	Day	Clock	☿	♂	♀	☿
	beg.	rife	fet.	ends	of D.	inc.	be. ☉	rife.	fets.	rises.	rises.
1	3 28	531	630	8 33	12 50	5 0	3 47	4m 58	2m 51	5m 3	5m 10
7	3 11	510	642	8 50	13 28	5 33	2 0	4 37	2 31	4 4	5 0
13	2 50	5 7	654	9 5	13 47	5 57	0 21	4 10	1 0	4 35	4 57
19	2 41	456	7 5	9 20	14 0	6 10	rif	3 55	1 50	4 20	4 47
25	2 20	145	7 10	0 41	14 31	6 41	2 1	3 34	1 20	4 54	3 54

## M. A. Y. hath XXXI Days.

9.

First Quart. 2 day, 3 after.	D	☉ de. north	♄ de. south	♃ de. north	♂ de. north	♀ de. north	♁ de. north
Full Moon 9 day, 9 morn.	1	15 17	5 38	22 0	4 43	11 37	8 20
Last Quart. 17 day, 2 morn.	7	17 15	27 21	52 6	30 14	11 13	7 13
New Moon 24 day, 10 night	13	18 33	5 16	21 43	8 15	16 32	19 57
First Quart. 31 day, 8 night	19	19 55	5 7	21 33	9 56	18 38	21 49
	25	21 54	50 21	21 11	33 20	27 24	28 24

M D	W D	Festival Days.	Aspects & Weather.	☉ fets.	☉ 8	♄ 8	♃ 8	♂ 8	♀ 8	♁ 8	☉ de north
1	F	St. Philip &	St. James	Morn	11 28	20 23	14 4	26 26	43 16	26	26
2	S				0 49	12 26	20 23	15 5	28 10	41 12	43
3	D	3 S. af. East.	I. of the C.		1 20	13 24	20 23	16 6	8 24	59 8	15
4	M	2 return			1 46	14 22	20 23	16 7	2 5	20 3	17
5	T		Brisk gales		2 12	15 20	21 24	17 8	4 23	45 15	54
6	W	John P. Lat	of wind		2 37	16 18	21 24	18 10	6 8	10 6	59
7	T		with		3 3	17 16	21 24	19 11	8 22	30 11	39
8	F		showers of	☉ rif.	13 14	21 24	19 12	10 6	41 15	37	
9	S		rain.		8 12	19 12	21 24	20 13	12 20	30 18	31
10	D	4 S. af. East.			9 17	20 10	21 24	21 15	14 4	15 20	30
11	M	3 ret. W. H.	* ☉ ♀		10 11	21 8	21 24	22 16	17 33	21 10	
12	T	Old May d.	♂ ♀ ♀		10 57	22 6	21 25	22 17	18 31	20 39	
13	W		* ♀ ♀		11 34	23 3	21 25	23 18	21 13	11 19	7
14	T		♂ ☉ ♀	Morn	24 1	21 25	24 20	23 25	33 16	41	
15	F		☐ ♀ ♀		0 5	24 59	21 25	25 21	25 7	42 13	35
16	S		* ♀ ♀		0 31	25 57	21 25	26 22	27 19	41 9	58
17	D	5 S. af. East.	Roga. Su.		0 53	26 54	22 25	26 23	29 1	35 5	59
18	M	4 return	♂ ☉ ♀		1 13	27 52	22 26	27 24	11 13	20 1	47
19	T	Q. Char. bo.	* ♀ ♀		1 38	28 50	22 26	26 26	4 25	26 2	31
20	W	{Dunst.	Showers		1 54	29 47	22 26	26 27	6 7	32 6	46
21	T	Ascen. day	♂ ☉ ♀ of		2 16	11 45	22 26	26 26	8 19	50 10	50
22	F	Prs. Eliz. b.	5 ret. C. Ch		2 42	1 43	22 26	26 26	10 2	8 22	14 30
23	S		rain.		3 11	2 40	22 26	26 1	12 15	11 17	35
24	D	S. af. Ascen.	♂ ☉ ♀	☉ fets	3 38	22 27	2 2	14 28	18 19	49	
25	M	East. T. en.	♂ ☉ ♀		8 34	4 36	22 27	2 3	16 11	43 21	1
26	T	Augustine			9 28	5 33	22 27	3 4	18 25	23 21	0
27	W	Ven. Bede	Cold wind		10 13	6 31	22 27	4 5	20 9	17 19	42
28	T	Oxf. T. en.	☐ ♀ ♀		10 51	7 28	22 27	4 7	22 23	21 17	11
29	F	K. C. II. Ref	and rain.		11 23	8 26	22 27	5 8	24 7	33 13	38
30	S		♂ ☉ ♀		11 51	9 23	22 28	6 9	26 21	48 9	18
31	D	Whit Sund.	C. T. d. m	Morn	10 21	22 28	7 10	28 6	4 4	26	

D	D. 1 beg.	Sun rise	Sun set.	D. 1 ends	leng. of D.	Day inc.	Clock aft. ☉	☉ rises.	☉ fets.	♄ rises.	♀ rises.	♁ 8 m
1	2	3 43 <sup>6</sup>	7 23	9 58	14 45	6 55	3 11	3 m 12	1 m 9	3 m 50	4 m 28	29 35
7	1	3 37	4 25	7 36	10 24	15 11	7 21	3 46	2 50	0 40	3 34	4 19
13	1	2 41	5 15	7 46	10 51	15 31	7 41	4 02	2 28	0 28	3 17	4 11
19	0	3 44	4 6	7 55	11 27	15 49	7 59	3 54	2 5	0 7	3 24	4 28
25	11	3 50	8 2	8 2	16 38	18 13	8 13	3 27	1 41	1 13	4 6	2 40

	D	de. north	h de. south	24 de. north	♂ de. north	♀ de. north	♂ de. north
Full Moon 7 day, 8 night.							
Last Quart. 15 day, 7 night	1	22 10	4 51	21 7	13 21	22 8	25 35
New Moon 23 day, 8 morn.	7	22 50	4 45	20 53	14 48	23 11	25 7
First Quart. 29 day, midn.	13	23 16	4 41	20 38	16 10	23 49	23 43
	19	23 27	4 30	20 23	17 26	24 2	21 50
	25	23 24	4 37	20 7	18 35	23 50	19 49

MW	Festival Days.	Aspects & Weather.	D fets.	☉ II	☿ ♄	♂ ♀	☿ ♄	☿ ♄	☿ ♄	☿ ♄	☿ ♄
1 M	Whit Mon.	Nicomede	0 16	11 18	22 28	7 12	9 20	17 0	39		
2 T	Whit Tues	Pleasant	0 40	12 15	23 28	8 13	1 4	26 5	41		
3 W	Emb. Week	gales.	1 6	13 13	23 28	9 14	3 18	28 10	23		
4 T	K. Geo. III.	born 1738	1 34	14 10	23 29	10 15	5 2m	21 14	29		
5 F	P. Er. A. b.	Boniface	2 5	15 8	23 29	10 17	6 16	3 17	45		
6 S	[1771	Rain about	2 43	16 5	23 29	11 18	8 29	34 19	59		
7 D	Trin Sun.	these days,	D ril.	17 2	23 29	12 19	9 12	4 51	21	4	
8 M	1 retur. Tr.	with hail	8a 48	18 0	23 20	13 20	11 25	53 20	50		
9 T	[Col. elect.	and	9 28	18 57	23 20	13 21	12 8	40 19	48		
10 W		☐ ♀	10 3	19 54	23 0	14 23	13 21	13 17	40		
11 T	St. Barna.	* ♂ ♀	10 31	20 51	23 0	15 24	15 3	33 14	46		
12 F	Trin. T. b.	thunder.	10 53	21 40	23 0	15 25	16 15	39 11	17		
13 S			11 14	22 46	23 0	16 26	17 27	39 7	23		
14 D	1 S. af. Tri.	☐ ☉ ♀	11 34	23 43	23 0	17 28	18 9	33 3	14		
15 M	2 return	♂ ☉ ♀	11 54	24 41	23 1	18 29	19 21	26 1m	1		
16 T		Morn	25 38	23 1	18 25	21 3	23 5	16			
17 W	St. Alban	Windy	0 15	26 35	23 1	19 1	22 15	29 9	23		
18 T		with show-	0 30	27 32	23 1	20 2	22 27	48 13	11		
19 F		Δ ♀	1 5	28 30	23 1	21 4	23 10	8 25	16	29	
20 S	Tran. Edw.	K. W. S.	1 38	29 27	23 2	21 5	24 23	22 19	4		
21 D	2 S. af. Tri.	ers of rain	2 19	30 24	23 2	22 6	25 6	41 20	42		
22 M	3 return	* ♀ ♂	3 9	1 21	23 2	23 7	26 20	24 21	9		
23 T		☉ ☉ ♀	D fets	2 10	23 2	23 9	26 4	28 20	19		
24 W	S. John Ba.	☉ ☉ ♀	8a 44	3 16	23 2	24 10	27 18	49 18	10		
25 T	St. J. Col. el.	☉ ☉ ♀	9 19	4 13	23 3	25 11	27 3	21 14	51		
26 F		and	9 49	5 10	23 3	26 12	28 17	59 10	36		
27 S		thunder;	10 15	6 7	23 3	26 14	28 2	34 5	45		
28 D	3 S. af. Tri.	yet good	10 39	7 5	23 3	27 15	28 17	2 0	37		
29 M	4 ret. St. Pet.	weather in	11 6	8 2	23 3	28 16	29 1	19 4	29		
30 T	Buck-hunt.	general.	11 33	8 59	23 4	28 17	29 15	21 9	17		
	[comes in.										

D	D. L. beg.	Sun rise	Sun fet.	D. L. ends	eng. of D.	Day inc.	Clock aft. ☉	☿ rises.	☿ fets.	♂ rises.	♀ fets.	♂ m
1		3:50	8 10		16 20	8 30	2 33	1m 14	11a 20	2m 28	8a 8	27 56
7		3:43	8 15		16 30	8 40	1 33	0 50	11 0	2 12	8 22	27 37
13	all	3:40	8 17	Day	16 34	8 44	0 22	0 25	10 30	1 57	8 36	27 18
19		3:41	8 19		16 38	8 48	0 55	0 10	10 17	1 41	8 44	26 59
25		3:42	8 18		16 36	de. 2	2 13	11a 36	9 55	1 27	8 50	26 40

## JULY hath XXXI Days.

FI

	D	de. north	h de. fouth	4 de. north	8 de. north	♀ de. north	♂ de. north
Full Moon 7 day, 9 morn.							
Last Quar. 15 day, 11 morn.	1	23 6	4 38	19 50	19 37	23 12	18 2
New Moon 22 day, 4 after.	7	22 33	4 39	19 32	20 33	22 10	16 53
First Quart. 29 day, 6 morn.	13	21 46	4 42	19 13	21 22	20 45	16 30
	19	20 47	4 46	18 54	22 4	18 58	17 11
	25	19 33	4 52	18 34	22 38	16 52	18 21

M	W	Festival Days.	Aspects & Weather.	D fets.	☉ ☽	♂ ♀	♂ ♀	☽ ☽	D ☽	D de. fouth
1	W	Tri. T. ends	Hot and	Morn	9 50	23 4	20 18	R	29	13 31
2	T	Visit. V.M.		0 3	10 54	23 4	11 20	20 12	m 43	16 58
3	F	Dog d. beg.	fultry	0 37	11 51	23 4	1 21	20 26	3	19 27
4	S	Tr. St. Mar.	weather.	1 17	12 48	R	5 1	22 20	9 4	20 50
5	D	4 S. af. Tri.	Δ h ♀	2 6	13 45	23 5	2 23	26 22	4	21 7
6	M		Rain and	3 2	14 42	23 5	3 25	28 4	7 47	20 17
7	T	Cam. Com.	T. a Beck.	D rif.	15 39	23 5	3 26	28 17	10	18 28
8	W		♂ ♀ ♀	8a 27	16 37	23 5	4 27	27 29	41	15 40
9	T		windy.	8 52	17 34	23 6	5 28	26 11	52	12 31
10	F	Cam. T. en.	Warm and	9 10	18 31	23 6	5 30	26 23	55	8 45
11	S		* 4 ♂	9 35	19 28	23 6	6 1	25 5	52	4 41
12	D	5 S. af. Tri.	♂ D h	9 54	20 25	23 6	7 2	25 17	44	0 28
13	M	Oxford Act	pleasant	10 15	21 23	23 7	8 3	24 29	30	30 47
14	T		Δ h ♀	10 36	22 20	23 7	8 4	23 11	31	7 54
15	W	Swithin	Δ ☉ h	11 1	23 17	23 7	9 6	23 23	35	11 46
16	T		♂ 4 ♀	11 30	24 14	23 7	10 7	22 5	52	15 13
17	F		weather.	Morn	25 12	23 7	10 8	21 18	27	18 4
18	S		♂ D ♂	0 6	26 9	23 8	11 9	21 1	25	20 4
19	D	6 S. af. Tri.	Drizzling	0 51	27 6	23 8	12 11	20 14	49	21 2
20	M	Margaret	* ♂ ♀	1 40	28 4	23 8	12 12	20 28	40	20 46
21	T		♂ D ♀	2 52	29 1	23 8	13 13	10 12	58	19 11
22	W	Magdalen	♂ D 4	D fets	29 58	23 8	14 14	10 27	30	16 10
23	T		♂ D ♀	7a 40	30 56	23 9	14 16	10 12	34	12 20
24	F	Mag. C. ele.	rain for	8 14	1 53	23 9	15 17	10 27	36	7 35
25	S	St. James	some days,	8 40	2 50	23 9	16 18	10 12	34	2 22
26	D	7 S. af. T. St.	Ann M. V.	9 6	3 48	23 9	16 19	D 27	20	21 54
27	M		[M.	9 33	4 45	23 10	17 20	18 11	48	7 55
28	T		yet the	10 4	5 43	23 10	18 22	10 25	55	12 23
29	W		month dry	10 37	6 40	23 10	18 23	10 29	40	16 4
30	T		in general.	11 17	7 37	23 10	19 24	10 31	48	18 48
31	F			Morn	8 35	23 10	20 25	20 6	10	20 28

D	D. L. beg.	Sun rise	Sun set.	D. L. ends	leng. of D.	Day dec.	Clock be. ☉	h rites.	4 fets.	♂ rites.	♀ fets.	♂ m
1		3 44	8 16		16 32	0 6	3 26	11a 12	9a 34	1m 14	8a 52	26 21
7	all	3 47	8 13	Day	16 26	0 12	4 28	10 47	9 13	1 0	8 52	26 2
13		3 50	8 10		16 20	0 18	5 17	10 23	8 52	0 48	8 48	25 43
19		3 57	8 3		16 6	0 32	5 50	9 50	8 31	0 37	8 44	25 24
25	0 47	4 7	7 53	11 13	15 46	0 52	6 4	9 35	8 10	0 25	8 37	25 5

	D	☉ de. north	☿ de. south	♂ de. north	♀ de. north	♂ de. north
Full Moon	5 day, 10 night					
Last Quart.	14 day, 2 morn.	17 53	5 0	18 9	23 0	14 4
New Moon	20 day, 11 night	7 16	5 8	17 48	23 28	11 20
First Quar.	27 day, 3 aftern.	13 14	30 5	17 20	23 39	8 37
		19 12	35 5	27 17	4 23	44 5
		25 10	33 5	3 16	41 23	2 38
						13 26

M	W	Festival Days.	Aspects & Weather.	D fets.	☉ ♀	☿ ♀	♂ ♀	♀ ♀	♂ ♀	D fets.	☉ ♀
1	S	Lammas		0 1	9 32	23 11	20 27	21 19	1 21	2 2	
2	D	8 S. af. Tri.	Showers of	0 55	10 30	23 11	21 28	22 17	38 20	30	
3	M		☉ ☿	1 54	11 27	23 11	22 29	22 14	4 18	58	
4	T		☿ ☿	2 54	12 25	23 11	22 29	23 26	22 16	36	
5	W		rain, hail,	3 50	13 22	22 12	23 1	24 8	32 13	31	
6	T	Transfigur.	& thunder	D rif.	14 20	22 12	24 3	26 20	34 9	55	
7	F		begins the	7a 40	15 17	22 12	24 4	27 2	32 5	57	
8	S		☉ ☿	8 1	16 15	22 12	25 5	28 14	25 1	48	
9	D	9 S. af. Tri.	month.	8 22	17 12	22 13	26 6	29 16	2n 25		
10	M	St. Lawr.		8 43	18 10	22 13	26 8	1 8	7 6	33	
11	T	Prs. Br. bo.	Dog D.en.	9 6	19 7	22 13	27 9	3 20	1 10	27	
12	W	Pr. W. bor.	O. La. D.	9 35	20 5	22 13	28 10	4 2	8 13	59	
13	T	[1762		10 6	21 3	22 13	28 11	6 14	18 16	58	
14	F		Windy	10 46	22 0	22 14	29 13	8 26	49 19	14	
15	S	Aff. B. V. M.	with rain	11 34	22 58	22 14	30 14	10 9	43 20	35	
16	D	10 S. af. Tri.	☉ ☿	Morn	23 56	22 14	0 15	12 23	3 20	51	
17	M	[Pr. Fre. b.	☉ ☿	0 34	24 54	22 14	1 16	13 6	53 19	52	
18	T		and	1 43	25 52	22 14	2 17	15 21	12 17	37	
19	W		☉ ☿	3 0	26 40	22 15	2 19	17 5	58 14	11	
20	T		thunder.	D fets	27 47	22 15	3 20	10 21	4 9	45	
21	F	Pr. W. H. b.	☉ ☿	6a 43	28 45	22 15	4 21	21 6	20 4	40	
22	S		☉ ☿	7 12	29 43	21 15	4 22	23 21	35 of	43	
23	D	11 S. af. Tri.	Sudden	7 40	30 41	21 15	5 24	25 6	38 5	59	
24	M	St. Barthol.	showers	8 10	1 30	21 16	6 25	27 21	10 47		
25	T		towards	8 42	2 37	21 16	6 26	29 5	38 14	50	
26	W		the end.	9 20	3 35	21 16	7 27	19 29	17 55		
27	T		☉ ☿	10 6	4 33	21 16	7 28	3 2	54 19	54	
28	F	St. August.		10 56	5 31	21 17	8 29	5 15	57 20	45	
29	S	St. John Ba.		11 55	6 29	21 17	9 1	7 28	40 20	31	
30	D	12 S. af. Tri.		Morn	7 27	21 17	9 2	9 11	7 19	15	
31	M			0 55	8 25	21 17	10 3	11 23	23 17	7	

D	D. L.	Sun	Sun	D. L.	leng.	Day	Clock	♂	♂	♂	♀	♀	♂ m
	beg.	rife	fet.	ends	of D.	dec.	be. ☉	rises.	fets.	rises.	fets.	♂ m	
1	1 19	4 17	7 42	10 40	15 25	1 13	5 52	9a 7	7a 46	om 10	8a 25	24 42	
7	1 41	4 27	7 32	10 18	15 5	1 33	5 18	8 44	7 24	0 7	8 16	24 23	
13	2 3	4 37	7 22	9 56	14 45	1 53	4 24	8 20	7 30	0 0	8 6	24 4	
19	2 23	4 48	7 11	9 36	14 23	2 15	3 10	7 57	6 44	11a 55	7 55	23 45	
25	2 41	4 50	7 0	9 18	14 1	2 37	1 40	7 35	6 25	11 50	7 45	23 26	

## SEPTEMBER hath XXX Days.

13

Full Moon	4 day, 2 after.	D	☉ de. north	♄ de. south	♅ de. north	♆ de. north	♇ de. south	♈ de. north
Last Quart.	12 day, 3 after.	18	35	51	16 15	23 32	0 59	8 15
New Moon	19 day, 7 morn.	7 5	50 6	2 15	52 23	7 4	53 53	
First Quart.	26 day, 4 morn.	13 3	33 6	13 15	30 22	56 7	8 1 f	5 5
		19 1	14 6	24 15	8 22	31 10	6 5	31 31
		25 1 f	7 6	35 14	46 22	2 12	57 9	39 39

M	W	Festival Days.	Aspects & Weather.	D fets.	☉ ♀	♄ ♀	♅ ♀	♆ ♀	♇ ♀	♈ ♀	D de. south
1	T	Giles	Briik wind	1 59	9 23	21 17	11 5	13 5	30 14	15 15	
2	W	Lond. burnt	with	3 3	10 21	21 18	11 6	15 17	31 10	50 50	
3	T	[1666	thowers of	4 8	11 20	21 18	12 7	16 29	27 7	0 0	
4	F		* ☉ ♂	♄ rif.	12 18	21 18	12 8	18 11	✕ 20	2 56	
5	S		8 ♀ ♀	6 34	13 16	20 18	13 9	20 23	12 1	14 14	
6	D	13 S. af. Tri.	rain.	6 56	14 14	20 18	14 11	22 5	✓ 3	5 22	
7	M	Enurchus		7 19	15 13	20 16	14 12	24 16	57 9	19 19	
8	T	Nati. B. V.		7 45	16 11	20 19	15 13	25 28	54 12	55 55	
9	W	[M.	Showers &	8 16	17 9	20 19	15 14	27 11	8 59	16 1	
10	T		☐ ♂ ♀	8 53	18 8	20 19	16 16	29 23	15 18	26 26	
11	F		perhaps	9 38	19 6	20 19	17 17	31 5	11 46	20 2	
12	S		8 ☉ ♀	10 30	20 5	20 20	17 18	2 18	37 20	39 39	
13	D	14 S. af. Tri.	thunder.	11 33	21 3	20 20	18 19	4 1	51 20	8 8	
14	M	Holy Cross	* ♄ ♀	Morn	22 2	20 20	19 20	5 15	33 18	26 26	
15	T	Buck-h. en.	[♄ ♄ ♂	0 44	23 0	20 20	19 22	7 29	43 15	36 36	
16	W	Emb. Week	Δ ♀ ♂	2 2	23 50	20 20	20 23	9 14	20 11	42 42	
17	T	Lambert	[♄ ♄ ♄	3 22	24 58	20 21	20 24	10 29	19 7	0 0	
18	F		Rain about	♄ fets	25 56	19 21	21 25	12 14	33 1	47 47	
19	S		these days.	5 45	26 55	19 21	22 27	13 29	50 31	34 34	
20	D	15 S. af. Tri.	♄ ♄ ♀	6 16	27 54	19 21	22 28	15 15	0 8	40 40	
21	M	St. Matthew	♄ ♄ ♀	6 49	28 53	19 21	23 29	16 29	53 13	8 8	
22	T	K. Geo. III.		7 27	29 52	19 22	23 31	18 14	21 16	41 41	
23	W	[Cor. 1761	Cold winds	8 10	30 50	19 22	24 1	19 28	22 19	8 8	
24	T		to the end.	8 59	1 49	19 22	24 3	21 11	4 55	20 22	
25	F		* ♄ ♀	9 56	2 48	19 22	25 4	22 25	2 20	27 27	
26	S	St. Cyprian		10 57	3 47	19 22	26 5	24 7	15 19	27 27	
27	D	16 S. af. Tri.		Morn	4 46	19 23	26 6	25 20	12 17	33 33	
28	M	Sh. L. swor.	☐ ♂ ♀	0 1	5 45	19 23	27 8	27 2	24 14	52 52	
29	T	St. Mi. Prs.	C.A.M.b.	1 6	6 44	19 23	27 9	28 14	26 11	37 37	
30	W	St. Jerome	Hare-h. b.	2 10	7 43	19 23	28 10	29 26	22 7	56 56	

D	D. L.	Sun beg.	Sun rise	Sun fet.	D. L.	eng. of D.	Day dec.	Clock aft. ☉	♄ south	♅ rises.	♆ rises.	♇ fets.	♈ 8 m.	
1	3	25	13	646	8	57	13 33	3 5	0 24	12 44	3 m 4	11 44	7 a 32	23 4
7	3	18	524	635	8	41	13 11	3 27	2 22	12 20	2 49	11 40	7 22	22 45
13	3	32	536	623	8	27	12 47	3 51	4 26	11 57	2 34	11 37	7 12	22 26
19	3	47	548	611	8	12	12 23	4 15	6 31	11 34	2 20	11 34	7 2	22 7
25	4	0	550	599	7	59	11 59	4 39	8 35	11 11	2 5	11 31	6 52	21 46

	D	☉ de. fouth	☿ de. fouth	♄ de. north	♂ de. north	♀ de. fouth	♁ de. fouth
<b>Full Moon</b> 4 day, 7 morn.							
<b>Last Quart.</b> 12 day, 2 morn.	1	3 27	6 45	14 25	21 29	15 37	13 22
<b>New Moon</b> 18 day, 4 after.	7	5 46	6 54	14 4	20 52	18 4	16 35
<b>First Quart.</b> 25 day, 8 night	13	8 37	2 13	13 45	20 13	20 14	19 9
	19	19 15	7 9	13 26	19 32	22 6	20 49
	25	12 22	7 15	13 9	18 50	23 37	21 8

M	W	Festival Days.	Aspects & Weather.	D fets.	☉	☿	♄	♂	♀	♁	D	D de. fouth
1	T	Remigius	♂ D ♀	3 14	8 42	18 23	28 11	1	8 14	3 57		
2	F		Rain at the	4 19	9 41	18 24	29 12	2	20 6	on 10		
3	S		beginning.	5 22	10 41	18 24	30 14	3	17 58	4 18		
4	D	17 S. af. Tri.		D rif.	11 40	18 24	0 15	5	13 54	8 17		
5	M			5a 59	12 39	18 24	1 16	6	25 55	11 59		
6	T	Faith		6 28	13 38	18 24	1 17	7	8 8	15 11		
7	W		Δ ♀	7 2	14 38	18 24	2 18	8	20 16	17 47		
8	T			7 43	15 37	18 25	2 20	10	2 42	19 34		
9	F	St. Denys	Pleasant	8 33	16 36	18 25	3 21	11	15 20	20 25		
10	S	O. & C. T. b.	O. Mic. D.	9 31	17 36	18 25	3 22	12	28 15	20 12		
11	D	18 S. af. Tri.	for the	10 38	18 35	18 25	4 23	13	11 29	18 53		
12	M		□ ♀	11 50	19 35	18 25	5 25	14	25 4	16 28		
13	T	Fr. K. Edw.	♂ D ♂	Morn	20 34	18 25	5 26	15	9 3	13 3		
14	W		♂ D ♀	1 6	21 34	18 26	6 27	16	23 24	8 48		
15	T		season.	2 27	22 33	18 26	6 28	17	8 5	3 57		
16	F		Δ ♀	3 48	23 33	18 26	7 29	18	23 0	14		
17	S	Ethelred V.	Windy	5 10	24 33	17 26	7 3	19	8 2	6 23		
18	D	19 S. af. Tri.	St. Luke	D fets	25 32	17 26	8 2	20	23 2	11 8		
19	M		with show-	5a 25	26 32	17 26	8 3	20	7 16	15 8		
20	T		♂ D ♀	6 8	27 32	17 27	9 4	21	22 21	18 7		
21	W		♂ D ♀	6 56	28 32	17 27	9 5	21	6 1	19 53		
22	T		ers of rain.	7 50	29 32	17 27	10 7	22	20 8	20 25		
23	F			8 52	31 17	27 10	8 22	3	22 19	46		
24	S	[Crispin		9 55	1 31	17 27	11 9	22	16 12	18 6		
25	D	20 S. af. T. K.	G. III. ac.	10 59	2 31	17 27	11 10	22	28 42	15 37		
26	M	K. G. III. p.	Δ ♂ ♀	Morn	3 31	17 27	12 11	22	10 55	12 30		
27	T		Cold rain	0 4	4 31	17 28	12 13	22	22 57	8 54		
28	W	St. Simon &	St. Jude	1 8	5 31	17 28	13 14	22	4 51	5 0		
29	T		♂ D ♀	2 12	6 31	17 28	13 15	21	16 42	0 56		
30	F		at the end.	3 16	7 31	17 28	14 16	20	28 34	3 11		
31	S		□ ♀	4 20	8 31	17 28	14 17	20	10 30	7 12		

D	D. L.	Sun beg.	Sun rise	Sun fets	D. Lueng.	Day ends	of D.	Dec.	Clock	☿	♄	♂	♀	♁
1	4	12	6 11	5 48	7 47	11 37	5 1	10	32	10a 48	1m 51	11a 27	6a 44	21 29
7	4	25	6 23	5 36	7 34	11 13	5 25	12	19	10 24	1 34	11 23	6 37	21 10
13	4	37	6 34	5 25	7 22	10 51	5 47	13	50	10 11	1 18	11 19	6 30	20 51
19	4	49	6 46	5 13	7 10	10 27	6 11	15	2	9 37	1 11	11 14	6 25	20 31
25	5	06	6 58	5 16	7 01	10 3	6 35	15	50	9 13	1 43	11 8	6 23	20 12

	D	☉ de. fouth	☿ de. fouth	♄ de. north	♂ de. north	♀ de. fouth	♀ de. fouth
Full Moon 2 day, midnight							
Last Quart. 10 day, 11 mor.	1	14 41	7 20	12 51	18 1	24 53	18 51
New Moon 17 day, 3 morn.	7	16 31	7 22	12 37	17 19	25 32	14 45
First Quart. 24 day, 4 after.	13	18 11	7 24	12 24	16 39	25 44	11 48
	19	19 39	7 21	12 14	16 1	25 30	11 56
	25	20 55	7 21	12 6	15 27	24 50	14 t

M	W	Festival Days.	Aspects & Weather.	☾ fets.	☉ m	♄ ♄	♄ ♄	♄ ♄	♄ ♄	♄ ♄	☽ ♄	☽ de. north
1	D	21 S.af.Tri.	All Saints	5 24	9 32	17 28	15 19	19 19	22 32	10 59		
2	M	Pr. Edw. b.	All Souls	☽ rif.	10 32	17 28	15 20	18 4	8 42	14 21		
3	T	Prs.S.b. 1r.	☐ ♂ ♀	5 10	11 32	17 29	16 21	16 17	3 17	9		
4	W	[All S.C.el.	Windy	5 48	12 32	17 29	16 22	15 29	34 19	10		
5	T	Pow.P.1605	with rain	6 34	13 32	17 29	17 23	14 12	11 20	14		
6	F	Mic. T. be.	Leonard	7 29	14 33	17 29	17 25	13 25	15 20	16		
7	S	D.C.b.1745	or fleet.	8 32	15 33	17 29	17 20	11 8	25 19	12		
8	D	22 S.af.Tri.	☐ ☉ ♄	9 40	16 33	17 29	18 27	10 21	49 17	3		
9	M	[Prs.A.S.b	L.M.D.L.	10 54	17 34	17 29	18 28	9 5	52 29	56		
10	T	1768	☐ ☉ ♂	Morn	18 34	17 29	19 29	8 19	23 9	59		
11	W	St. Martin	♄ ☽ ♂ ♄	0 10	19 35	17 29	19 15	8 3	32 5	26		
12	T	2 return		1 28	20 35	17 29	20 2	7 17	53 0	31		
13	F	Britius		2 46	21 36	17 0	20 3	7 2	23 4	30		
14	S		Wind and	4 6	22 36	17 0	20 4	D 16	58 9	18		
15	D	23 S.af.Tri.	♄ ☽ ♀	5 25	23 37	17 0	21 5	7 1	53 13	33		
16	M	[Machutus	* ♀ ♀	☽ fets	24 37	17 0	21 6	7 16	2 16	57		
17	T	H.Bp.Linc.	showers of	4a41	25 38	17 0	22 8	7 0	19 19	15		
18	W	3 return	rain.	5 40	26 39	17 0	22 9	8 14	19 20	19		
19	T			6 32	27 39	D 0	22 10	8 27	58 20	9		
20	F	Edmund	♄ ☽ ♀	7 37	28 40	17 0	23 11	9 11	14 18	51		
21	S		☐ ☉ ♄	8 42	29 41	17 0	23 12	10 24	8 16	36		
22	D	24 S.a.T.C.	O. Mar.d.	9 48	1 41	17 0	24 13	11 6	42 13	37		
23	M	St. Clement		10 53	1 42	17 0	24 15	12 18	59 10	8		
24	T		Cold rain	11 57	2 43	17 1	24 16	13 1	2 6	17		
25	W	D.G.b.1743	* ♄ ♀	Morn	3 44	17 1	25 17	14 12	57 2	14		
26	T	[4 ret.	Ba.C.elec.	1 0	4 45	17 1	25 18	16 24	48 1	53		
27	F		☐ ♄ ♀	2 3	5 45	17 1	25 19	17 6	41 5	50		
28	S		or fleet.	3 6	6 46	17 1	26 20	18 18	38 9	48		
29	D	Advent Su.		4 10	7 47	17 1	26 22	19 0	345 13	20		
30	M	S. Andrew	Mic. T. e.	5 15	8 48	17 1	26 23	21 13	5 16	20		
		[Anni. me.	Rev. Soci.									

D	D. L.	Sun beg.	Sun rise	Sun set	D. L.	leng. of D.	Day det.	Clock aft.	☉ fouth	♄ rites.	♂ rites.	♀ fets.	♀ m
1	5	13 7 12	149 6 48	9 37	7 1	16 14	8 a	45	12 a	22	11 a	16 a	24 19 50
7	5	20 7 22	139 6 41	9 17	7 21	16 38	21	12	2	10	52	5 27	19 31
13	5	29 7 32	129 6 32	8 57	7 41	15 22	7	56	11	41	10	42	6 32 19 12
19	5	36 7 41	120 6 25	8 39	7 59	14 10	7	31	11	19	10	31	6 41 18 53
25	5	41 7 48	116 6 18	8 28	8 15	12 29	7	6	10	57	10	17	6 40 18 34

	D	de. louth	h de. louth	4 de. north	8 de. north	♀ de. louth	♂ de. louth
Full Moon 2 day, 5 night							
Last Quart. 9 day, 6 night	1	21 57	7 18	12 0	14 56	23 44	16 51
New Moon 16 day, 5 night	7	22 43	7 14	11 57	14 31	22 17	19 34
First Quart. 24 day, 1 after.	13	23 13	7 8	11 55	14 12	20 30	21 53
	19	23 27	7 0	11 57	14 0	18 24	23 37
	25	23 24	6 51	12 0	13 57	16 42	24 38

M	W	Festival Days.	Aspects & Weather.	D fets.	☉ ↑	h ×	4 ♀	8 ♀	♀ ♀	D 8	D de. north
1	T			6 19	9 49	17	1 27	24 22	25 39	18 38	
2	W		Cold rain	D rif.	10 50	17	1 27	25 24	8 11 30	20 3	
3	T		or snow	5 15	11 51	17	1 27	26 25	21 37	20 24	
4	F		at the	6 16	12 52	17	1 28	27 27	4 59	19 37	
5	S		beginning,	7 24	13 53	17	1 28	29 28	18 36	17 43	
6	D	S. in Ad.	* ♀ ♂	8 37	14 54	17	1 28	30 28	2 20	14 46	
7	M	[Nicholas	☉ 4 ♂	9 51	15 55	17	1 28	1 1	16 20	10 58	
8	T	Co. of V.M.	☐ ☉ h	11 7	16 56	17	1 29	2 3	0 23	6 33	
9	W		[6 D 4 Morn	17 57	17	1 29	3 4	14 30	1 45		
10	T		with brisk	0 24	18 53	17	1 29	4 6	23 40	3 10	
11	F		winds.	1 42	19 59	17	1 29	5 7	12 51	7 55	
12	S			2 53	21 0	17	1 29	7 9	27 0	12 15	
13	D	3 S. in Ad.		4 14	22 1	17	1 0	8 10	11 6	15 52	
14	M		Wind with	5 27	23 2	17	1 0	9 12	25 6	18 32	
15	T		♂ D ♀	6 35	24 3	17	1 0	10 13	8 4	58 20	3
16	W	O.S.C.T.e.	Em. week	D fets	25 4	17	R	0 11	15 22	37 20	23
17	T	Ox.T. ends	♂ 4 ♂	5 7	26 6	17	1 1	12 16	6 3	29 32	
18	F		rain or	6 12	27 7	17	1 1	13 18	19 11	17 38	
19	S		now.	7 18	28 8	17	1 1	14 19	2 2	14 54	
20	D	4 S. in Ad.	♂ D ♀	8 24	29 9	17	1 1	16 21	14 35	11 33	
21	M	St. Thomas	Short. day	9 29	30 10	17	1 1	17 22	26 52	7 46	
22	T		♂ D h	10 32	1 11	18	1 1	18 24	8 56	3 44	
23	W		[Δ ☉ 4	11 35	2 13	18	1 1	19 26	20 51	0 23	
24	T		Frosty to	Morn	3 14	18	1 2	20 27	2 42	4 28	
25	F	Christ. day	Fox-h. be.	0 33	4 15	18	1 2	21 29	14 33	8 23	
26	S	St. Stephen	Δ 4 ♀	1 41	5 16	18	1 2	22 30	26 30	12 1	
27	D	18. af. Chr.	St. John	2 45	6 17	18	1 2	23 2	8 33	15 13	
28	M	Innocents	[Δ ♂ ♀	3 48	7 18	18	1 2	24 3	21 2	17 48	
29	T		the end.	4 50	8 20	18	1 2	25 5	3 45	19 35	
30	W			5 47	9 21	18	1 2	26 7	16 49	20 22	
31	T	Silvester		6 42	10 22	18	1 2	28 8	0 16	20 2	

D	D. L. beg.	Sun rise	Sun set.	D. L. ends	eng. of D.	Day dec.	Clock aft. ☉	h fets.	4 rises.	8 rises.	♀ fets.	♂ 8 m
1	5 47	7 55	4 5	6 13	3 10	3 28	10 22	12 26	10 32	10 20	7 23	18 15
7	5 51	8 1	3 59	6 9	7 58	3 40	7 53	11 42	10 7	9 45	7 16	17 50
13	5 51	8 3	3 57	6 9	7 54	3 44	5 6	11 17	9 41	9 26	7 30	17 37
19	5 54	8 5	3 55	6 6	7 50	3 48	2 9	10 52	9 14	9 57	43	17 18
25	5 53	8 4	3 56	6 7	7 52	in. 2	be. 51	10 28	8 47	8 41	7 57	16 59

Last Year's ENIGMAS Answered.

- |                       |                     |                              |
|-----------------------|---------------------|------------------------------|
| I. Guide-Post.        | V. An Als.          | IX. Snow.                    |
| II. Slate and Pencil. | VI. A Vowel.        | X. Bed.                      |
| III. A Fart.          | VII. Bladder.       | XI. Fishing-Fly.             |
| IV. Letter A.         | VIII. Pocket Watch. | XII. <i>Prize</i> , A BADGE. |

PRIZE ENIGMA answered, by Mr. John Smith. School-Master, of Garthorp, near Melton-Mowbray, Leicestershire.

ON CHARITY.

How blest are they, who do in wealth abound,  
And spend their days in one continual round  
Of virtue, peace, and honor, void of fear,  
Throughout the seasons, of the rolling year.  
But doubly blest are they, who, milt with love,  
Enjoy those gifts, and blessings, from above;  
Never unmindful, of that bounteous hand,  
Who gave them all, and does that all command.  
That with a heart enlarged, as their store,  
With what they well can spare, relieves the poor,  
The orphan, and the widow, at their gate,  
Whose *badged* arms, declare their abject state.  
Such gen'rous actions, and unshaken zeal,  
No tongue can speak, nor grateful heart can tell;  
When once this transitory life is o'er,  
Titles, and honors, will avail no more.  
But charity, will neither fade nor die,  
But will accompany, our souls on high,  
To those blest regions, of the saints above,  
Where all is joy, sweet harmony, and love.

The same answered, by Mr. Charles Metcalf, School-Master, of Great Dalby, Leicestershire.

Honors, and grandeur, nobleness of birth,  
Titles, and ribbons\*, are much sought on earth,  
No titles, nor riches, I shall ever gain,  
But hope, thro' faith, salvation to obtain.

PRIZE ENIGMA, and the ANAGRAM, answered, by Mr. John Needham, of Hinckley.

To improve your Time, heaven grant you success, An.  
I've sent you my mite, for I could do no less;  
Your Badge is delightful, and pleasing to wear,  
None with British ladies, for wit, can compare.

\* Alluding to a Badge.

## GENERAL ANSWERS to all the ENIGMAS.

*All the ENIGMAS answered, by Mr. John Smith, School-Master, Garthorp, near Melton-Mowbray, Leicestershire.*

## AN ADDRESS TO THE AUTHORS.

To you, kind sirs, with gratitude and joy,  
 I do my muse, in strains of praise employ;  
 May the work prosper, that you have begun,  
 Until the wheels of time shall cease to run.  
 Truly it is a *Guide-post* for our youth, 3.  
 When well apply'd, we may assent to truth;  
 In learning's track, and mathematics art,  
 They may with *Slate and Pencil*, shew their part. 2.  
 And, in that work, they sure will pleasure find,  
 'Tis pleasing recreation, for the mind,  
 While eagerly they *Watch*, and long to know, 8.  
 With judgment clear, and spotless as the *Snow*. 9.  
 The path to trace, the fabric of the sphere,  
 To weigh the moments, of the circling year;  
 While some with heads, that are as *Bladders* light, 7.  
 In nothing else, but vanity delight.  
 May be compared, to the silly *Fly*, 11. }  
 That spend their days, but know not how, or why;  
 Or for what purpose, their time do enjoy.  
 But dull, and stupid, senseless as the *Afs*, 5.  
 Like to a *Puff of Wind*, they quickly pass, 3.  
 Their useless lives away, and waste their time,  
 And scarcely know, that *A's* the *Vowel* prime. 4. 6.  
 But those who most to study are inclin'd,  
 To find out matter, to improve mankind.  
*Distinguish'd-honor's*, may all such receive, *Allud. Prize.*  
 And while on earth, in health and affluence live,  
 To hoary age, but when to live they cease,  
 May they lie down, upon a *Bed* of peace. 10.

*All the ENIGMAS answered, by Mr. Charles Metcalf, School-Master, of Great Dalby, Leicestershire.*

A *Guide-post* in the first, you may behold, 1.  
 A *Slate and Pencil*, will the next unfold. 2.  
 The third's a *Blast of Wind*, which quick doth pass, 3.  
 The next the letter *A*, the fifth an *Afs*. 4. 5.  
 A *Vowel, Bladder, Watch, Snow, Bed, and Fly*, 6, 7, 8, 9, 10, 11.  
 In the six following, I can plainly 'spy,  
 Your *Badge* of honor, hope now to obtain, *Prize.*  
 And I, your correspondent, will remain.

All the ENIGMAS answered, by J. Burr, of Digby, near  
Sleaford, in answer to the two first Queries.

Greatness consists not in *A* splendid Star, 4. 6. Prize.

Sumptuous jewels, ostentatious car;

Illustrious titles, magnificent state,

*Bedizen'd* vestments, pompous coronet. 10.

Full as preposterous is the *Bladder'd* hope, 7.

Of finding it, in sensual'ties scope;

Voluptuous pleasures, life's a gilded *Bait*, 11.

When gratify'd, apungent pain create.

Benevolence, and hospitality,

Inferiors treated—as we'd wish to be;

A faithful execution, of the charge,

Which heaven's deposited, to us at large,

A strict adherence, to the laws of God,

Will constitute us, truly great and good;

In all the mazy labyrinths of life,

When all subsists, in elemental strife.

Reason, that heav'n-illumin'd lamp, will *Guide*, 1.

Our future conduct, and each grief subside;

*Watch* well her impulse, wisdom is her aim, 8.

Discretion next, and prudence wait their claim.

Virtue succeeds, and then experience we,

Our lives to pass, in sweet tranquillity; 5.

And ever after, we shall find as *now* 9.

Her smiles benign. no terror on her brow.

Nor abject fortune, nor condition hard,

Will e'er our peace of mind, or bliss retard;

This brings content, and happiness at heart,

I'll pledge my *Slate and Pencil* to a *F--t*. 2, 3.

All the ENIGMAS answered, by Mr. John Needham, of  
Hinckley.

A *Fart* for them that never take, 3.

The *Slate and Pencil*, for to make, 2.

The letter *A*, but like an *As*, 4, 5.

Regardless how the time does pass.

With such you need not go abroad,

To read the *Post* upon the road, 1.

Who the first *Vowel* ne'er did know, 6.

Nor which spring makes the *Watch* to go, 8.

Of *Badge* *Snow*, *Bladder*, some ne'er think, Prize. 9. 7.

Like silly *Flies* they eat and drink 11.

'Till night, and then they reel to *Red*, 10.

With an intoxicated head.

*All the ENIGMAS answered, by Mr. Wm. Swift of Stow.*

A R U R A L O D E.

Whilst aurora gilds the morning, With a sweet delightful ray, Blooming flowers, th' fields adorning, With <i>Guide-post</i> for t' shew the way.	1.
With the early lark awaking, Leaves his <i>Snow-white Bed</i> I say,	9. 10.
Labour ev'ry hour pertaking, Whistling thoughts, and cares away. Then how pleasant, and contented, Lives this homely country clown, With <i>Slate and Pencil</i> , unacquainted,	2.
A <i>F--t</i> he says, for all th' town.	3.
He's no <i>Badge</i> for to attend him,	Prize.
No <i>Watch</i> to know the time of day,	8.
A <i>Fly-bread Afs</i> , a friend hath lent 'im, For to pass his time away.	11. 5.
No <i>Puff'd</i> up pride is in his cot, Virtue is his guiding clue, A little learning he has got, T' know his <i>A E I O U</i> .	7.
Nature all his toil befriending, Of her treasure, he's posselt, Health and peace, his life attending, No monarch, sure, is half s' blest.	4. 6.

*All the ENIGMAS answered, by Automathicus.*

Now the cold blasts of frost, and <i>Snow</i> , are all blown o'er,	9.
And smiling spring doth crown our isle from shore to shore, I with the eastern light, each morn, rise from my <i>Bed</i> ,	10.
With a <i>Badge</i> upon my arm, trip to th' verdant mead,	Pr.
Or else unto the marsh, and old <i>Trent</i> side I hie, Tho' I ne'er angle with th' rod, nor with th' busy <i>Fly</i> ,	11.
Sometimes by th' <i>Guide-post</i> , I towards Bingham rove,	1.
Where oft I muse, on th' false fair, 'till I'm a slave t' love.	
But th' great <i>Alpha</i> chiefly, is the theme of my song,	4.
And divine contemplations, m' silent walk prolong, 'Till eight o'clock, shew'd by m' <i>Watch</i> , I return t' my charge,	8.
With <i>Slate</i> , <i>Pencils</i> , and books, young minds for to enlarge,	2.
Teach them t' spell a <i>Vowel</i> , a <i>Bladder</i> , and an <i>Afs</i> ,	6, 7. 5.
But th' <i>Huzzza</i> from behind, we seldom do express.	3.

All the ENIGMAS answered by Master John Shakespere, a Youth of 13½ Years, Pupil to Mr. Thomas Adcock, School-Master, in Ashby-de-la-Zouch.

ON SPRING.

Mild is the spring, serene the air, Hail then, sweet month of May, When nature does her charms prepare, To deck the vernal day.	
No Guide-post now, mark'd with an A, Nor Slate, or Pencil, please,	1. 4. 2.
Like charming Flora's month of May, Which unto all gives ease.	
No frigid blast, can e'er annoy, Thy mild, and pleasant, reign, Whose Snow-white bosom ne'er can cloy,	9.
So sweet's thy graceful mein.	
The Bed, and Lace, resplendent shine, With rich men here below,	10. Prize.
A Bladder, and Bell-clapper fine, That sound and sight bestow.	7, 8.
The braying Ass's dreadful voice, Th' animal race alarms,	5.
Like Flying troops, who shun the noise, And horrid din of arms.	11.
The blooming maid, with rustic song, Now gambols on the plain,	
Without a Vowel frisk along, To meet her love-sick swain.	6.
The warbling songsters, thro' the grove, Their wintry fears resign,	
With raptur'd joy, and eager love, Their lays harmonious join.	

Ingenious general Answers were also given by Messrs. R. Allwood, J. Bower, B. Burn, Clark, Cator, Dalby, Eaton, Evers, Fletcher, Garton, Gillot, Gibson, Hunter, Jackson, Kite, Lowe, Langley, Mason, Nelson, Newham, O'Kelly. Puzzlecom, Philomathes, Rowley; Mr. Sankey, and many others.

Last Year's REBUSES answered.

I. Wax.	IV. Detraction.	VII. Carlton.
II. Widow.	V. Malice.	VIII. Hannah Prince.
III. Devil.	VI. Liverpool.	IX. Shakespear.

*All the REBUSES answered, by Mr. John Needham, of  
Hinckley.*

*Detraction* is the *Devil*, *Malice* is the same, 4. 3. 5.  
Th' *Widow'd* wife in *Liverpool*, I will never name, 2. 6.  
But at *Carlton*, t' *Hannah Prince*, I'll send m' love indeed, 7. 8.  
By a good *Wax* candle we *Shakespeare's* works will read. 1. 9.

*All the REBUSES answered, by Mr. Charles Metcalf, School-  
Master, of Great Dalby, Leicestershire.*

IN AN ADDRESS TO THE CORRESPONDENTS.

Diarian gents (if I make so free)  
I beg the kind favour, of your company,  
To dine (some day th' next year) at the py'd bull,  
Or at the *Shakespeare's* head, in *Liverpool*. 9. 6.  
Friend *Langdale*, of *Carlton*, hope will be there, 7.  
And Miss *Hannah Prince*, whom his heart doth ensnare, 8.  
With friend *Swift* of *Stow*, or his *Widow'd* wife, 2.  
And all true friends, whom I love as my life.  
*Detraction*, and *Malice*, works of th' *Devil*, 4. 5. 3.  
W'll banish from us, with words that are evil,  
And let's be merry, good humour'd, and free,  
And *Seal* our engagements, with true amity. 1.

*All the REBUSES answered, by Mr. Wm. Swift, of Stow.*

The other day walking, it being in spring,  
And calling at *Carlton*, where bells sweetly ring, 7.  
A *Widow* of fortune, th' *Devil* is in it, 2. 3.  
A *Maliceful Villain*, comes ev'ry minute. 5. 4.  
A *Liverpool* rival, they tell me he's one, 6. 9.  
My heart melts like *Wax*, at the name *Huddleston*, 1.  
But I'll try once again, before I go hence,  
I'll not be debar'd, of my dear *Hannah Prince*. 8.

*All the REBUSES answered, by Mr. J. Burr, of Digby.*

THE DISAPPOINTED WIDOW.

The wife became a *Widow*, straight way hies, 2.  
To break the *Wax*, and ope' the will—espies, 1.  
I *Shakespeare*, late of *Liverpool*, resign'd, 9. 6.  
(Tho' weak in body, wholly sound in mind);  
To *Hannah Prince*, of *Carlton*, half my store, 8. 7. }  
At twelve month's end—abominable whore,  
Vociferated she—the rest she tore.  
All *Malice*, and *Detraction's*, much too civil, 5. 4.  
I with him, and his whore, both at the D.--1. 3.  
Last

Last Year's CHARADES answered.

- |                         |                 |                |
|-------------------------|-----------------|----------------|
| I. Friend-ship.         | III. Death-bed. | V. Bird-lime.  |
| II. Punch-bowl.         | IV. Cow-slip.   |                |
| PARADOX, Three Fidlers. |                 | ANAGRAM, Time. |

*All the CHARADES answered, by Mr. Charles Metcalfe.*

- As over the *Punch-bowl*, we sit merry and free, 2.  
 Let the bond of true *Friend-ship*, our motto still be, 1.  
 For friendship, like *Bird-lime*, entangles our hearts, 5.  
 And nothing, but *Death bed*, true friendship e'er parts 3.  
 But false friends in adversity, will soon away,  
 And, like *Cow-slips* in spring, disappear in a day. 4.

*All the CHARADES answered, by Mr. John Needham.*

- If you British ladies, think it any pain,  
 T' have any *Friend-ship*, with an unlearned swain, 1.  
 Sooner than offend, to my *Death-bed* I'll go, 3.  
 So next year, dear ladies, I pray let me know.  
 You have others, I grant, with *Bird-lime* quite new, 5.  
 Whose poetical numbers, flow perfectly true,  
 If I'm disregarded, I'll fill the *Punch-bowl*, 2.  
 With good *Cow-slip* wine, to chear up my soul. 4.

*All the CHARADES answered, by Mr. Wm. Swift, of Stow.*

- 'Twas down in a meadow, where *Cow-slips* look gay, 4.  
 Where m' fair one I saw, busy making of hay,  
 I gave her the day, then our *Friend-ship* began, 1.  
 And I thought, really thought, that I was the man.  
 So, as close as *Bird-lime*, I stuck to my fair, 5.  
 And light, as a feather, was m' heart I declare,  
 I drank her health, in a *Punch-bowl* of liquor, 2.  
 Inviting our sexton, clark, and our vicker,  
 Ne'er thought of a *Death-bed*, did all dance and sing, 3.  
 And we tip'd off full bumpers, to God save th' King.

*An acrostical Answer to all the CHARADES, by Mr. J. Burr.*

A silt my muse, ye sweet Pierian train,  
 Come aid my flight, in a poetic strain,  
 Of *Friend-ship*'s *Bird-lime*, chains I fain would sing,  
 What charms accrue—then stoop, and flag my wing.  
 Sweeter than *Punch-bowl*, to the thirsty throat,  
 Love, when compar'd to, it's a *Death-bed* note,  
 I'm friendship's bond, when soul, with soul, unites,  
 Pleasure commences, without bound delights.

*The PARADOX answered, by Mr. J. Burr, of Digby.*

*Three Fiddlers were scraping, and playing hum-drum.  
Collected three guineas—a capital sum.*

*An Answer to the ANAGRAM, by Mr. Charles Metcalfe.*

*'The thief that purloins from the cheese, is a mite,  
Which transpos'd makes Time, if't be transposed right.*

### Last Year's QUERIES answered.

#### I. QUERY answered, by Mr. John Needham, of Hinckley.

There is a nobility of extraction, much raised above, what can owe its rise to flesh and blood, and that is *virtue*, which being the same in souls, that the other is in bodies, and families; and as the soul is to be preferred to the body, this mortal honor, and nobility, prizes its value so far above all other qualities, that the *stoical satyr*, following the doctrines of that school, is bold to say, that nothing but virtue deserves the name of nobility; and there is nothing truly noble, but what is sincerely virtuous: this will make you, as it did *Augustus*, the ornament of your age: and as it made *Titus Vespasian*, the delight of mankind.

#### II. QUERY answered, by Mr. Wm. Swift, of Stow.

Fear God, and his commandments keep in mind,  
Then true content, and happiness you'll find;  
When you those precepts keep, those steps pursue,  
Those heav'n born guests, your sure to have in view.

*The same answered, by Mr. John Needham, of Hinckley.*

Unto all others, justice do,  
Peace, love, and virtues paths pursue,  
And to shew mercy, take delight,  
To keep those heav'n born guests in sight.

#### III. QUERY answered, by Mr. T. Cock, Cirencester, Gloucestershire.

'Tis manifest that any burning body will appear with its greatest lustre in the dark; for if it be surrounded by any extraneous light of less intensity than its own, the apparent brightness of its lustre, will be equal, only, to the excess of intensity of its own greatest light, above that light which surrounds it. Hence, if the intensity of the extraneous surrounding light be equal to, or greater than, that of any igneous body at its surface, that body will then appear to have no light of its own.—*The same answered by Mr. Needham.*

#### IV. QUERY

IV. QUERY, answered, by Mr. John Needham, of Hinckley.

A polished razor, &c. that has the property of a plane mirror, if it be held parallel to the horizon, such objects, as are perpendicular to it, will appear inverted. *Donn's epit. of expl. Philosophy.*

V. QUERY answered, by Mr. J. Burr, of Digby, near Sleaford.

I cannot conceive what probable reason can be alledged for there being no rainbow before the flood. It is repugnant to common sense, to suppose there was no rain for the space of 1656 years. There were always the same causes to produce the same effects from the beginning; the same sun to exhale the vapours; the same requisites to congregate them into clouds; the same luminous rays to cause reflection, &c. And God does not say I do make a new bow, but that from henceforth it shall be considered in a new light, viz. a pledge between me and you, and all flesh; and I looking upon it will remember my covenant, &c. *Mr. John Needham* answered it nearly in the same manner. But *Mr. Wm. Swift, of Stow*, says, that no rainbow appeared before the flood, is evident, from the following argument; first, God saith to *Noah*, I do set my bow in the cloud, and it shall be for a token of a covenant between me and the earth, and it shall come to pass, when I bring a cloud over the earth, that the bow shall be seen in the cloud, &c. *Gen. ix.* Now had there been a rainbow before the flood, there had been no occasion of the above expression.

VI. QUERY answered, by Mr. John Needham, of Hinckley.

Steam, of any heat whatever, if it be not some how confined, and caught, as it were, by some object near at hand, but being let into the air loose, like that rising from a seething-pot, or slaking lime, as far as we can trace it, that is, so long as it continues visible, does not, by its motion, shew any great disposition, or tendency, towards rising steadily, briskly, or the shortest way into such parts of the atmosphere as may be of equal gravity therewith. But it rather seems vaguely to fly hither and thither, 'till it can be absorb'd, and received by the air thereby warmed, in some manner, as the breath from the lungs, and other humid vapours are. *C. Fluids.*

VII. QUERY answered, by the Proposer, Mr. John Dalton.

It is well known to astronomers, of what signal service, to that science, the discoveries made by telescope have been. The different phases of Venus; the satellites of Jupiter, and Saturn;

Saturn; the spots upon the disks of the sun, and planets; and the times of their rotation upon their axes discovered therefrom; the progressive motion of light; the vast numbers, and almost infinite distances of the fixed stars, are only some of the phenomena of the universe; the knowledge of which we owe to this instrument. All which have been of great service, not only to corroborate the copernical hypothesis, but also to pave the way for the discovery of universal gravity, whereby the same hypothesis is actually demonstrated to be true.—On the other hand, though the microscope cannot boast of throwing light upon any particular subject in nature equal to this, yet its use to the different branches of science is more extensive, having been subservient to the examination of the minute parts of nature, under very different circumstances, as the curious fabric, and contexture, of the animal and vegetable worlds at large has received additional light by means of it.—Upon the whole, however, from what is hitherto known, I am apt to think, the telescope may justly claim the preference, in the point of view in which we have now been considering them.

*The same answered, by Mr. Wm. Swift, of Stow.*

Telescope hath been, in natural knowledge,  
The most approv'd, by masters of our college.

VIII. QUERY answered, by Mr. John Needham, of Hinckley.

I do entirely acquiesce with the learned Doctor's hypothesis of the different stratas descending, according to their relative gravities. But, at the creation, the elements would be in such a confusion, that there might be large quantities of air, water, and other materials, that would form long subterraneous cavities, between the most ponderous beds of strata, and there ferment together, and at last burst from their confinement (as is the case in earthquakes) and then the strata of coal might very easily slide under those of a superior specific gravity. This is my opinion, that the strata of coal is found at a considerable depth, and under beds of a far denser nature.

IX. QUERY answered, by the same.

The immaculate son of GOD, did not curse the fig-tree because he found no fruit thereon, for by his omniscient power, he knew that it was barren before he came to it, but it was to shew, his disciples, the effectual power of faith; and this he confirmed to *Peter*, when he said, if ye have faith, and doubt not, but believe, ye might say to the mountains, be ye cast into the sea, and it shall be done.

X. QUERY

## X. QUERY answered, by the same.

The manner in which GOD visits the sins of the fathers upon the children, is in a temporal, and not in a spiritual way, and is such that must come in course, for instance, as he did with the children of Israel in the seventy years captivity, those that were born, during that space of time, suffered for the sins of their fathers. But in a future state, GOD declares, he will not visit the sins of the fathers upon the children; for in *Eze.* chap. xviii. 20. *The soul that sinneth, it shall die.* The son shall not bear the iniquity of the father, neither the father the iniquity of the son, &c. And in *Acts*, chap. x. 34, 35. it is said, that GOD is no respecter of persons, but, in every nation, he that feareth him, and worketh righteousness, is accepted with him.—*In a similar manner it was answered by Messrs. J. Burr, W. Swift, W. Wright, and others.*

*The BASKET OF BREAD answered, by Mr. J. Burr, of Digby, with a Repast of CHEESE.*

ADDRESSED TO THE AUTHOR.

Friend *Swift*, I've sent, and hope they'll please,  
For ev'ry loaf, a piece of cheese.

"A county palatine," will show

A crust, for *barley* bread, I trow,

"Six todd and half's," my friend, I scan

A choice repast, with bread of *bran*.

"A river in the shire of *notts*,"

Is excellent with cake of *Oats*.

"Ladies garments," worn at *Lincoln*,

With good *wheat* bread, 's th' best I think on.

*The same answered, by Mr. John Needham, of Hinckley.*

I think, *Mr. Swift*, I can make a shift,

To answer your basket of bread,

You've *oats*, *barley*, and *bran*, if right I'd scan,

And *wheat*, so no more need be said.

*New ENIGMAS to be answered in next Year's DIARY.*

I. ENIGMA (13.) By Mr. Wm. Swift, of Stow.

By the fair I am made,  
Very useful in trade,  
In various shapes do appear,  
I am round, and I'm square,  
And I'm triangular,  
And thousands of heads I do bear.  
Many heads did I say,  
Yes, and eyes too you may  
Upon me, fair ladies, behold,

And as neat is my dress,  
I will leave you to guess,  
Sometimes I am dressed in gold.  
For the good that I do,  
I am stab'd through and through,  
So cruelly us'd by the fair;  
So I'll turn to the men,  
And hold twenty to ten,  
That my name they cannot declare.

II. ENIGMA

## II. ENIGMA (14.) By Mr. John Needham, of Hinckley.

Inactive you'll find me, when I was alive,  
 Now dead, I am a useful thing,  
 My nose in my mothers cold bosom they drive,  
 When me to my station they bring.  
 It is by brutal force they drag me about,  
 'Then handed I am by a clown,  
 While at topfy turvy we're playing, no doubt,  
 A game that is much in renown.  
 For the nations good, it is very well known,  
 Hodge budges along then with me,  
 I toil for the monarch, that sits on the throne  
 His civiliz'd subjects may see.

## III. ENIGMA (15.) By Mr. John Sankey.

Enigmatists, permit me to appear,  
 In *British Diary*, for the present year,  
 My sad condition, let me now relate,  
 And to your mercy, show my abject state.  
 You kings, and princes, lords, and nobles all,  
 Some pity take, e'er I distressed fall,  
 Let your enlighten'd minds, now condescend,  
 'To my weak dictates, and remain my friend.  
 I dreadful tortures daily undergo,  
 And pains unnumber'd, still remain to grow,  
 Amazing! shocking! wonderful to behold,  
 With what reluctance, I do quit my hold.  
 What pangs I suffer, e'er I do submit,  
 'Till by compulsion, I am forc'd to quit,  
 And then plac'd under some inhuman hand,  
 And bruis'd, and tortur'd, just at his command.  
 I've none to guard me, from oppressions rod,  
 But forc'd, alas! to wait the tyrants nod,  
 And in confusion great I'm forc'd to lie,  
 And to the vengeance of all ranks comply.  
 Take one hint more, and pity our sad case,  
 We're bought, and sold, like to the brutal race.

## IV. ENIGMA (16.) By Mr. Abraham Sapcoat, of Burton-lazars, near Melton, Leicestershire.

The sacred pages do relate,  
 My being was of early date,  
 Before our blest redeemer then,  
 Came down from heaven, t' dwell with men.  
 But, to this day, my use is known  
 In city, country, and in town,

Tho,

Tho', of my self, I nought can do  
 Without man's help, as you must know,  
 Nor will his help at all suffice,  
 Unless he brings some more allies,  
 I mean not human, nor yet brute,  
 But things that are in great repute.  
 And, like myself, they are recorded,  
 I th' pages that at first I quoted,  
 Then jointly we, by man's assistance,  
 The good and bad set at a distance.  
 And lest they should again unite,  
 I force the bad to take its flight.

V. ENIGMA (17.) *by Mr. William Marsden, Netherhurst, Derbyshire.*

When glorious sol, great ruler of the day,  
 Through sultry cancer, takes his radiant way;  
 When bounteous nature, in her pride appears,  
 And flow'ry fields, a pleasing prospect wears.

For great exertions, then, I am brought forth,  
 And former deeds declare, my well known worth;  
 If *Collin*, arm'd with me, but takes the field,  
 By him impell'd, I soon make thousands yield.

Not young, or old, that come within my pow'r,  
 Can gain a respite, for a single hour;  
 As near relation I am to an elf  
 Of pigmy-size, compar'd unto myself.

With such a set of teeth, I will maintain,  
 That all within his grasp, he bites in twain;  
 Though I destroy, I'm never cruel thought,  
 For my assistance, ev'ry year is sought.

By me, the farmer does great profit make,  
 Though many times, I cause his back to ach;  
 For gen'ral good, I my assistance lend,  
 To king, and country am a steady friend.

VI. ENIGMA (18.) *By Mr. W. Nelson.*

From mother earth's capacious womb,  
 By human force, I'm brought,  
 Then various torments are my doom,  
 E'er to the shape I'm wrought.  
 In which on youths, I often wait,  
 To shew 'em the right way  
 From whence they're apt to deviate,  
 And, thoughtless, go astray.

Yet

Yet I, like them too, have a guide,  
 A kingly name who bears,  
 And when I travel by his side,  
 It's then my use appears.  
 A namesake too I have it's true,  
 Which don't for me mistake,  
 For he is of a darker hue,  
 And diff'rent is his make.  
 He's sometime us'd instead of me,  
 Which may my value settle,  
 But all the world, it's plain, agree,  
 That I'm the better metal.  
 Many a march, for you, I've took,  
 Over yon argent plain,  
 For which reveal me in your book,  
 That all may know my name.

VII. ENIGMA (19.) *By Mr. Burne.*

I was form'd for a mate, easy, modest, and coy,  
 Tho' I sometimes fall out, greater brute, you'll say, I;  
 Yet, when e'er I don't with her comply or accord,  
 She gently slips from me, saying not a cross word.  
 Soft music you'll say then, to us two does belong,  
 Neither she, nor I never, come out with a song;  
 Tho' to man I stick fast, who of me should take care,  
 Yet, I sometimes am finger'd, as well by the fair.  
 Thro' whose kind assistance, I so often slip in,  
 A slit set with hair round—you may know what I mean;  
 (*Sapienti sal verbum*)—I need say no more,  
 Since, yourself has been taken, at that sport before.  
 There's the statesman, physician, or graver divine  
 Or, who keep strictest morals, are said most to shine,  
 Me, with my dear mate, never scruple to join.  
 There's no prude, or coquet, holy sister demure,  
 But accept of my help, as it forwards the cure  
 Of their ails—or to stop, what might otherwise come,  
 Being useful abroad, full as much as at home.  
 The fine beau, cit, or clown, still the ladies like more,  
 Howe'er empty, or vain, if I stand up before.  
 King, queen, lords, and commons, nay each sex, and degree,  
 All are fond, on occasion, to make use of me.  
 A great risque, by a practice illegal, I run,  
 And, by rubbing at random, am often undone;  
 Chaste Joseph had suffer'd, some very much fear,  
 Thro' his wanton desire, had I been used there.  
 But to keep you no longer, in doubtful suspense,  
 The solution of this, you may guess at, from hence,

An elliptical figure t' a circle I stretch,  
Find the focus of that, and the riddle you catch.

VIII. ENIGMA (20.) By *Urania*.

'Tis I that fire the lovers heart with pain,  
And by my aid, no lover sighs in vain;  
'Tis I that teach the lover how to love,  
And do the fair with sweet compliance move.  
Of all your wakeful thoughts, I am the theme,  
You court me too, in every nightly dream;  
With ladies I, to balls, and plays retire,  
Where I, their tender hearts, with love inspire.  
Not one sweet passion, e'er can be express'd,  
But I unbounded reign within your breast;  
In constant love, I am the brightest scene,  
Indeed without me, love had never been.  
From hence, ingenious artists, solve my name,  
Whose pow'r, does much attribute, to your fame.

IX. ENIGMA (21.) By *S. S.*

Ye wits reveal, unto the world, my name,  
For to record, in *Diary* of fame;  
From mother earth, original arose,  
Tho' since I've pass'd thro' various scenes of woes.  
Tho' by the fair, receive my present name,  
Who with unrival'd art my being frame;  
Both neat and clean, I often times am seen,  
When *Damon*, to his fair, trips o'er the green.  
Tho' oft I look so grim, so dark and mean,  
That I'm abhor'd, by every sprightly swain;  
I help for to adorn, the airy beau,  
T'were not for me, an odd figure he'd shew,  
And all his gait, look mean and low. }  
When *Julius Cæsar*, did this land invade,  
Perhaps was near him, when his scheme was laid;  
I did accompany *Blakeney*, at Mahon,  
'Thro' dangers great, when England's valour shone.  
With our bold British fleets, I'm sure to be,  
When cruising on th' Mediterranean sea;  
When quarrels rise, oh! then I'm oft abus'd,  
And for no fault at all, I am ill us'd.  
Tho' I endure such detrimental fate,  
I still am honor'd, both by poor and great.

X. ENIGMA (22.) By *T. Timothy*.

Ingenious bards, be pleas'd to relate  
My name, from what I here communicate;

I, from

I, from as early date, can trace my birth,  
 As any other being upon earth.  
 And yet a day will come, to rich and poor,  
 By fate decreed, when I shall be no more;  
 Of all the winged tribe, I'm priz'd the most,  
 There's few who've power got like me, to boast.  
 Nay, it is such, that even kings depend  
 On me, to know how their events must end;  
 The lawyer, doctor, and the canting quack,  
 Statesman, divine, all my assistance lack.  
 Sometimes I in, the play-house do appear,  
 And if you go to church you'll find me there;  
 Where death himself, doth pay me due respect,  
 And ah! ye mortals, if you should neglect  
 T' embrace me, I am quickly gone, and then  
 All th' art of man, can't fetch me back again.  
 I have such influence, o'er poor and rich,  
 You'd almost swear, I was a real witch;  
 The greatest villanies, that lie conceal'd,  
 And deepest secrets, are by me reveal'd.

But now, I'll leave you to yourselves to guess,  
 And tell me who this something, nothing is.

XI. ENIGMA (23.) By R. Alwood.

Ye puzzling wits, don't think my pedigree,  
 Of despicable mean, and low degree;  
 For tho' my parent rose out of the earth,  
 I boast a higher, and more noble birth.  
 Yet in process of time, to earth I come,  
 Then barb'rous cruel usage, is my doom;  
 Perhaps, to some devouring beast, a prey,  
 Or buried alive, in earth, or clay.  
 Yet though thus treated, bear such sad abuse,  
 I'm to this nation, of great worth and use,  
 At least, my parent is, who often roam  
 Abroad, with dreadful thunder in her womb.  
 Thro' me Great-Britain, rules the raging main,  
 Her warlike sons, their haughty foes have slain;  
 My parent bore me, yet from me she sprung,  
 Tho' I'm a dwarf, she's stately, stout, and strong.  
 And may, in homely cottage, oft be seen,  
 Or in kings palace, where I've seldom been  
 For I am mostly found on verdent green.  
 Me, or my parent, once had power to save,  
 A *British Monarch*, from the threatening grave,  
 Enough is said, my name is all I crave.

XII. ENIGMA (24.) *Being the Prize Enigma, by Mr. J. Burr, of Digby, near Sleaford.*

*Enigst.* Whither so fast, my flutt'ring gew-gaw, say,  
Why, this anxiety, to get away?  
Thou know'st not half the hardships that attend,  
Those that launch forth, devoid of any friend.  
If fortune quickly seem, thy hopes to crown,  
She's so unstable, she'll as quickly frown.

*Enig.* I fear not friends—who ever yet did see,  
A maid despis'd, so elegant as me,  
The thistle, and the rose, upon my breast,  
Shine neatly on my party colour'd vest,  
More requisites, than these, belong to me,  
Pray what are they?—The charms of novelty.

*Enigst.* I own they are, a powerful argument,  
When novelty, doth knowledge represent;  
But empty trappings, in a novel stile,  
Are gilded nothings, please while they beguile.

*Enig.* Investives ne'er, my purpose shall restrain,  
For inspiration, seizes on my brain;  
Methinks, I'm mounted on a lofty car,  
Whole groups of people hither do repair.  
Them I, with candour and good will, receive,  
For me a prophets they do believe;  
The menial oppress'd by cruelty,  
Inquires the happy period, he is free.  
'The learn'd divine, mistrusting his own skill,  
Asks mine—when he his talents must reveal;  
The philosophic sage, the witty fair,  
The math'matician hither do repair,  
I scan their merits, bring their works to view,  
Reward the victor with a laurel bough.

*Enigst.* Enough—let merit be my constant aim,  
Then friends will strive, to propagate my fame;  
And, with what is uncommon, thou'lt be blest,  
'The more advanc'd in years, the more carefs'd.

NEW REBUSES.

I. REBUS (10.) *By Automathicus.*

One half of an ensign, borne before m' lord may'r,  
Two thirds of a grain, which in Old England grows;  
A nocturnal insect, whose bite we don't fear,  
And a fourth of a gem, as red as a rose.

When rightly connected, the name will display,  
A charming sweet creature, more blooming than May.

## II. REBUS (11.) By Mr. John Needham, of Hinckley.

Three letters shew, a prelate's name,  
Direct, reverse, will read the same,  
He was carefs'd in days of yore,  
So British bards his name explore.

## III. REBUS (12.) By Mr. John Sankey.

To a fossil well known, add a murm'ring rill,  
And then pray annex the reverse to a hill;  
When these are united, they surely will tell,  
'The name of a place, where at present I dwell.

## IV. REBUS (13.) By Mr. Wm. Swift, of Stow.

You who, in numbers, take delight,  
My fair one's name, tell at first sight;  
Four numbers (firs) will clear the doubt,  
If right combin'd, will make it out.

## V. REBUS (14.) By Automathicus.

To two thirds of an insect, for industry fam'd  
Add one sixth of a plant, that by most children's nam'd,  
What the cook puts i'th' pudding (when but one she has  
got)

To procure an increase, as it boils in the pot.  
One fourth of that bird, into which *Scylla* was chang'd  
A cardinal point robb'd, of a letter next rang'd;  
Then a sixth part of a county town, if you please,  
Where our famous *Shakespeare* ne'er took up his degrees.  
If, unto these, you now half a denial combine,  
You'll see the name of a lovely nymph all divine;  
Whose fair outside beauties, tho' engaging you find,  
Are far excelled by those of her virtuous mind.

## VI. REBUS (15.) By Mr. J. Burr.

Description would be beggar'd, to unfold,  
'The charms of her, that keeps my heart in hold;  
A thousand graces, revel in her eyes,  
And on her smiles, ten thousand cupids rise.  
Fairer than *Venus*, rising from the sea,  
More lovely than, th' *Idalian deity*;  
One third of what, we our relations call  
The time when gentle *Somnus* governs all.  
These right connected, instantly 'll appear,  
My charmer's name, whom I so much revere.

VII. REBUS (16.) *By Mr. Abraham Sapecoat.*

Three fourths of a star, one fifth of a crown,  
 With one third of our general mother,  
 Th' whole of a member, in beast, and in man,  
 By which, they all their danger discover;  
 Then next take a liquid in grammar i' call'd,  
 And then, place them all right, in their station,  
 And they, unto you, a town will unfold,  
 That stands near to the heart of the nation.

VIII. REBUS (17.) *by Mr. S. Gibson.*

To one half of a place, where sin took its first rise,  
 Add three fourths of a term us'd for Betty,  
 Perhaps the fair maid, proves a fond loving jade,  
 Shewing something that's form'd by the witty.

NEW CHARADES.

I. CHARADE (6.) *By Mr. John Sankey.*

A shining head, will bring my first to view,  
 A creeping reptile, will my second shew,  
 My whole illuminates the lonesome way,  
 When night's dark sable curtain, shuts the day,

II. CHARADE (7.) *By Mr. Wm. Swift, of Stow.*

My first is a confine, where felons are shut,  
 My next fastens iron, which on doors are put;  
 My whole, at sometimes, is as bitter as gall,  
 At other times sweet, and attends on your call,  
 Appear on your side-board in parlour or hall. }

III. CHARADE (8.) *By Automathicus.*

The sweets of my first, I have never once tasted,  
 My second, his time among hunters have wasted;  
 My whole, blooming maids wish, to possess very soon,  
 When e'er morning is past, they'd not stay until noon.

IV. CHARADE (9.) *By Mr. John Needham.*

My first is three fifths, of latin for hand,  
 And shews what th' fair one, would have at command.  
 The use of my second, t' you I'll unfold;  
 'Tis were round the head, for to keep 'em from cold.  
 Some men, thro' my whole, have been sent t' th' jailors,  
 Tho' little of me, you'll find, in nine tailors.

V. CHARADE (10.) *By Mr. William Marsden.*

To shew my first, you hasten to the shade,  
Beware my next, lest you are captive made;  
My whole, a curious emblem, doth impart  
By far surpassing human skill or art.

VI. CHARADE (11.) *By Mr. J. Burr.*

My first on stage, what an eclat and hiss,  
Whilst o'er my next, the wretch blasphemes his God;  
My whole, the coyest nymph will deign to kiss,  
And am most valued, when come from abroad.

### NEW PARADOX.

I. PARADOX (2.) *By Mr. Wm. Swift, of Stow.*

One *Thomas*, and *John*, they both travel'd together,  
In th' hot sands of *Asia* (were birds of a feather)  
The one cover'd with frost, and the other with snow,  
A whole year together—but how, let me know.

### NEW ANAGRAM.

I. ANAGRAM (2.)

Amongst the sons of Vulcan, I am found,  
Transpose me right, I'm worth a thousand pound.

### NEW QUERIES.

I. QUERY (11.) *By Mr. T. Cook, of Cirencester, Gloucestershire.*

Required the best practical method, of giving a proper spherical figure, to a concave brass tool, to grind a concave speculum, of a given long focal distance.

II. QUERY (12.) *By Mr. John Needham.*

When, by whom, and on what account was the famous *Delian* problem first cultivated by geometricians.

III. QUERY (13.) *By the same.*

Ingenious artists, tell to me; of what service, is rain at sea.

IV. QUERY (14.) *By Mr. J. Burr.*

I should be obliged to some of your ingenious correspondents, to explain the following—If any man's work shall be burnt, he shall suffer loss; but he himself shall be saved; yet so as by fire. 1 Cor. iii. 15.

Last Year's MATHEMATICAL QUESTIONS answered.

I. QUESTION (1.) answered, by Mr. J. Burr, of Digby, near Sleaford.

First, 4000 feet of poplar at 6d each, amounts to 100l. Then  $P \times tr = A = 432l. 3s. 10\frac{1}{2}d.$  Secondly, 4000 feet at 1s. 6d. = 300l. the difference of which sums is = 132l. 3s. 10 $\frac{1}{2}$ d.

Lastly,  $\frac{P \times tr - 300l.}{4000} = 17\frac{3}{4}d.$  the gain per foot in favour of poplar at the end of 50 years.

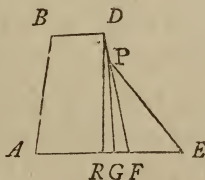
The same answered, by Mr. Geo. Ratliff, of York.

Forty feet of willow or poplar being worth one pound, the amount of which for thirty years at the given rate of interest is 4l. 6s. 5 $\frac{1}{2}$ d.: but forty feet of oak at the end of 50 years is worth but 3l. therefore willow or poplar is the most advantageous.

Answers were also given by Messrs. R. Allwood, T. Alsop, J. Bower, B. Burn, R. Blythe, S. Blackley, T. Burton, J. Barns, R. Bowmer, T. Broomhead, C. Bulman, T. Clark, S. Cross, T. Cater, B. Crosby, P. Dalby, T. Daykin, J. Darrington, T. Dudley, B. Dennisi, J. Eaton, J. Enson, J. Evers, J. Fletcher, T. Garton, H. Gillott, M. Gedling, T. Gilson, J. Hunter, B. Harris, S. Jackson, B. Kite, S. Lowe, T. Langley, B. Lutterworth, R. Mathews, B. Milward, T. Mason, P. Rowland, J. Slack, and A. Young.

II. QUESTION (2.) answered, by Mr. S. Cross, of Nottingham.

Let A B D F represent the hay-rick, and from D let fall the perpendicular D R; then in the triangle R D F are given the sides; hence by Trig. the  $\angle D F R 83^{\circ} 39' 36''$  the comp. of which to  $180^{\circ}$  is the  $\angle E F P$ : now in the triangle F P E are given P E, E F, and the  $\angle F$ ; hence by Trig. the side F P = 42.3526; therefore P D = 2.9243 feet the distance the ladder will slip from the top of the rick; the content of the top part 946 feet, and the trusses of hay to top the rick 856.8.



And thus nearly is the solution given by Messrs. Allwood, Burr, Broomhead, Clark, and Evers.

An Algebraical Answer, by Mr. P. Dalby.

Let G F =  $x$ , F E =  $12 = d$ , R F =  $5 = s$ , R D =  $45 = a$ , and D F = P E =  $45.2769 = w$ . Then by similar triangles  $s : a ::$



The same by Mr. S. Crofs.

Draw the lines as in the figure, and let  $AB = 15.60 = a$ ,  $BC = 13.20 = b$ ,  $CD = 10 = c$ ,  $AD = 26 = d$ , and  $DE = x$ . Then (by *Euc.* 36.3)  $AE \times DE = BE \times CE$ ; therefore the triangles  $ABE$  and  $CDE$  are similar; wherefore  $a : a + x :: c : dc + cx$ , and  $BE = \frac{ba + dc + cx}{a}$ ; hence  $a : \frac{ba + dc + cx}{a} :: c : x$ , and  $x = \frac{bac + dc^2}{a^2 - c^2} = 32.5$  chains. Let  $s =$  half the sum of the four sides; then (by *Emer. Geom. cor.* to the 40.4) we have  $s - AB \times s - BC \times s - CD \times s - DA \sqrt{\frac{1}{2}} = 21.504$  acres the content of  $ABCD$ . Now as  $AE : AB + BE :: BE - AB : 39.78$  the difference of the segments of the base; therefore  $RE$  is 49.14, hence, by *trig.* the nat. sine of the  $\angle BER = .2461583$  and  $BR = 12.479972$  cha. consequently the area of the triangle  $BER = 30.66329$ ,  $\triangle CED = 14.99996$ ,  $\triangle zEs = 22.1679$ , and  $\triangle eEn = 29.33896$  acres. Now, similar figures being as the squares of their like dimensions, we have  $\triangle BER : BR^2 :: \begin{cases} \text{area } \triangle eEn : ne^2 = 149.0229 \\ \text{area } \triangle zEs : sz^2 = 112.6989 \end{cases}$  the square roots being taken, gives 12.2074, and 10.6112 chains, the length of each dividing line  $W. W. R.$

The same by Mr. P. Rowland, of Robinficks.

Since the sum of the opposite angles are  $180^\circ$ , the trapezium may be inscribed in a circle. Let  $AB = 15.60 = a$ ,  $BC = 13.20 = b$ ,  $CD = 10 = n$ ,  $AD = 26 = d$ , and  $DE = x$ . Then (by *Euc.* 36.3.)  $AE \times DE = BE \times CE$ ; therefore the triangles  $ABE$ , and  $CDE$  are similar; therefore  $a : d + x :: n : dn + nx$ , and  $EC = \frac{ba + dn + nx}{a}$ . Again,  $a : \frac{ba + dn + nx}{a} :: n : x$ ; hence we have  $x = \frac{ban + dn^2}{a^2 - n^2} = 32.5$  chains. Now we have given the sides of the triangle  $ABE$ , and also those of  $CED$ , the difference of their areas is 21.50396 acres, equal the area of  $ABCD$  the inscribed trapezium. Hence the areas of the triangles  $BER$ ,  $CED$ ,  $zEs$ , and  $eEn$  are 30.66329; 15; 22.1679; and 29.33896, acres respectively; and similar figures being as the squares of their like dimensions we have, as the area of the  $\triangle BER : BR :: \begin{cases} \text{area } \triangle eEn : ne^2 = 149.0229 \\ \text{area } \triangle zEs : sz^2 = 112.5989 \end{cases}$  whose square roots are  $\begin{cases} 12.2074 \\ 10.6112 \end{cases}$  chains, the length of the dividing lines  $W. W. R.$

Answers were also given by Messrs. Alsop, Bower, Blith, Cator, Dalby, Daykin, Dudley, Denis, Eaton, Enson, Fletcher, Garton, Gillot, Gilson, Hunt, Hull, Jackson, and others.

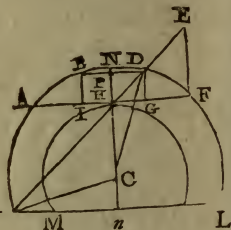
## V. QUESTION (5.) answered, by the Proposer.

*Construction.* With the two given radiuses upon C as a center describe the two circles M H G and A F L; draw A F a tangent to the circle K H; make F E perpendicular, and equal, to H F, and draw E H K bisecting A F in H; also draw D G  $\parallel$  F E and it is done. For F E = F H, by construction; consequently G I = 2 G D. *Calculation.* In the triangle K C D, is given the angle K, and the sides K D and D C, hence we have by trig. K D = 8.1198, and K H = 5.6568; therefore H D = 2.463, G D = 1.7416, and G I = 3.4832.

An Algebraical Answer, by Mr.

J. Bower.

Let C H = 4 = a, C N = 6 = b, and H P = G D = x. Then, by the circles property,  $b + a + x \times b - a - x = x^2$  K hence  $x^2 + 4x = 10$ , and  $x = 1.74165$ ; therefore  $2x = 3.4833$  the length.



The same by Mr. T. Garton.

Let C H = 4 = n, C N = 6 = m, and P N = x. Then by the property of the circle  $\frac{2m - x}{x} \times x = \frac{m - n - x}{x}^2$ ; hence  $x^2 - 8x = -2$  and  $x = 4 \pm \sqrt{14} = .25835$ ; therefore the breadth is 1.74165, and length 3.4833.

*Solutions were also given by Messrs. Alsop, Blith, Burton, Calor, Dalby, Daykin, Dudley, Eaton, Enson, Fletcher, Gillot, Hunt, Hall, Jackson, Langley, Lang, Young, and others.*

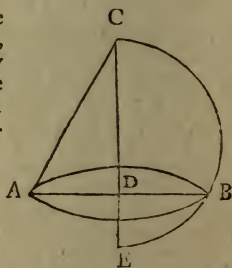
## VI. QUESTION (6.) answered, by Mr. Thomas Cock, of Cirencester.

Conceive a semi-circle C B E to be described on the produced axis C E, and to pass through B, the extremity of the base diameter A B. Put the altitude C D of the cone = x; then D B<sup>2</sup> the square of half the diameter of its base = (by putting  $b = \frac{a}{1.0472}$ )  $\frac{b}{x}$ ,

$$B C = \sqrt{x^2 + \frac{b}{x}}, \quad D E = \frac{D B^2}{C D} = \frac{b}{x^2},$$

$$C E = x + \frac{b}{x^2}; \text{ now the square of the}$$

time of descent down the side of the cone, or the chord C F, being



being equal to that down the vertical diameter C E, is as  $x + \frac{b}{x^2} = \text{a minimum}$ ; in fluxions  $\dot{x} - \frac{2b\dot{x}}{x^3} = 0$ ; hence  $x = 2b^{\frac{1}{3}}$  = C D; therefore D B =  $b^{\frac{1}{3}} \sqrt[6]{\frac{1}{2}}$ , and B C =  $b^{\frac{1}{3}} \sqrt{\frac{1}{2} \frac{1}{3} + \frac{1}{4 \frac{1}{3}}}$ .

*The same answered, by Mr. Timothy Simpson, the Proposer.*

Put  $a$  = the solidity,  $b = 3.1416$ ,  $c = 16 \frac{1}{12}$ , and  $x$  = perpendicular altitude; then will  $\sqrt{\frac{3a}{bx}}$  express the radius of the base; hence  $\sqrt{\frac{3a}{bx} + x^2}$  is the slant side, and by mechanics,  $x : \sqrt{\frac{3a}{bx} + x^2} :: \sqrt{\frac{x^2}{c}}$  (the time of descent down the perpendicular altitude) :  $\sqrt{\frac{3a}{bcx^2} + \frac{x}{c}}$  the time of descent down the slant side, which, or its square  $\frac{3a}{bcx^2} + \frac{x}{c}$  is (per question) to be a minimum; hence  $x = \sqrt[3]{\frac{6a}{b}}$ .

*The same answered by Mr. George Ratliff.*

Put  $a$  = the solidity,  $c = 3.1416$ ,  $s = 16 \frac{1}{12}$ , and  $x$  = the perpendicular of the cone; then  $\sqrt{\frac{3a}{cx}}$  will be the radius of the base, and (by 47. 1.)  $\sqrt{\frac{3a}{cx} + x^2}$  the slant side; hence (by mechanics)  $5^{\frac{1}{2}} : 1 :: x^2 : \frac{x^2}{6^{\frac{1}{2}}}$  the time of descent down the perpendicular, and  $x : \sqrt{\frac{3a}{cx} + x^2} :: \frac{x^2}{c^2} : \sqrt{\frac{3a}{csx^2} + \frac{x}{s}}$  the time of descent down the slant side, which, or its square  $\frac{3a}{csx^2} + \frac{x}{s}$  is to be a minimum, in fluxions  $\frac{\dot{x}}{s} - \frac{6acsx\dot{x}}{c^2s^2x^4} = 0$ ; hence  $x = \left[\frac{6a}{c}\right]^{\frac{1}{3}}$ , and the diameter  $2\sqrt{\frac{3a}{6ac^2\frac{1}{3}}}$ .

*Solutions were also given by Messrs. Alison, Allwood, Bower, Blyth, Burton, Broomhead, Clark, Cross, Dudley, and Enson.*

To the VIIth Question, we have received no answer. The DIARY being not generally advertised; we suppose the Proposer has not met with one; but for the time to come, shall insert no new questions, but those that have solutions sent with them.

## VIII. QUESTION (8.) answered, by Mr. P. Rowland.

As the distance of the eye from the bottom of the window 12 feet, is to radius, so is one foot the distance up the bar, to .083333 the natural tangent of  $4^{\circ} 45' 49'' 7'''$ , which added to  $90^{\circ}$  gives  $94^{\circ} 45' 49'' 7'''$  the angle subtended between the cloud and the center of the earth, at the first observation; and as 4001 is to the sine of  $94^{\circ} 45' 49'' 7'''$  or  $85^{\circ} 14' 10'' 53''' = .9965457$  so is 4000 to  $.9962966 =$  sine of  $85^{\circ} 4' 3''$ ; hence the angle at the center, or the distance of the cloud from the zenith =  $10' 7'' 53'''$ . In the same manner the distance from the zenith at the second observation is found =  $1' 43'' 48'''$ . Now as  $12^f$ : (R)  $1 :: 2 : .1666666 =$  nat. tangent of  $9^{\circ} 27' 41'' 21'''$  the angle contained between the two vertical circles; now we have given the two sides of a spherical triangle, and the contained angle; hence, by spherics, the third side is  $8' 25'' 43'''$  the arch of a circle through which the cloud moves in 40 minutes; hence as  $77760000'' : 25139.0832$  miles the circumference of the circle in which the cloud moves ::  $30343''' : 9.8096$  miles; therefore its velocity is nearly at the rate of one mile in four minutes. Now as  $5$ : (R)  $1 :: 2 : .4$  the nat. tangent of the angle which the wind makes with the meridian =  $21^{\circ} 48' 5'' = N$  by  $W \frac{1}{2} W$ .

Nearly in the same manner was the solutions given by Messrs. Allwood, Bower, Burn, Evers, Fletcher, and Gillet.

## IX. QUESTION (9.) answered, by Mr. R. Allwood.

The diameter of the circle belonging to the hollow of a wave is easily found to be 20 feet, and the angle subtended by the hollow of a wave =  $73^{\circ} 44' 22''$ . Now as  $360^{\circ} : 62.832$  feet the circles periphery ::  $73^{\circ} 44' 22'' : 12.87$  feet which is nearly the breadth of a wave when they are broad, and does not rise high (*vide Gravesand's Philosophy*, p. 208). By the motion of

pendulums  $\sqrt{39.2} : 1'' :: \sqrt{12.87 \times 12} : \frac{\sqrt{12.87 \times 12}}{\sqrt{39.2}} = 1''.98$

the time of a pendulum vibrating whose length is the breadth of a wave; therefore  $20' \times 60'' \div 1''.98 = 606.0606$  the number of vibrations the pendulum makes in twenty minutes; consequently  $606.0606 \times 12.87 = 7700$  feet the space it described on the undulatory surface of the water, and  $606.0606 \times 12 = 7272.7272$  feet the cask's distance in a right line when first observed.

The same answered by Mr. J. Fletcher.

The radius of the circle belonging to the hollow of a wave is 10 feet, and the angle subtended by the hollow of a wave is  $73^{\circ} 44' 21''$ . Now as  $360^{\circ} : 62.832$  feet the circles periphery ::  $73^{\circ}$

$73^{\circ} 44'. 21'' : 12.86$  feet the hollow of a wave ; if the breadth of a wave be taken 12 feet (*which is according to Mr. Emerson*)

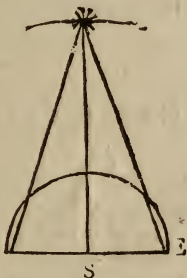
we have  $39.21^{\frac{1}{2}} : 1'' :: 12 \times 12^{\frac{1}{2}} : \frac{12}{39.21^{\frac{1}{2}}} = 1.916$  ; therefore  $20' \times 60 \div 1.916 = 626.304$  the number of vibrations in twenty minutes, and  $626.304 \times 12 = 7515.648$  feet the calks distance in a right line when first observed ; also  $626.304 \times 12.86 = 8060\ 5324$  feet the space it described on the undulatory surface of the water.

Nearly in this way was the solutions given by Messrs. Alsop, Bower, Burn, Blythe, Burton, Barns, Bowmer, Broomhead, Clark, Cross, Cator, Dalby, Dakin, Dennis, Eaton, Evers, Garton, Gillot, Hunter, Hunt, and Harris.

X. QUESTION (10.) To this question we received but one solution, and it was not right.

XI. QUESTION (11.) answered, by the Proposer.

By reason of the vast distance of the star, together with its great latitude, the ratio of two lines drawn from it, to any two points in the earth's orbit, will be that of equality very nearly ; hence a line bisecting the parallactic angle, will bisect the diameter of the earth's orbit also, or will pass through the sun. Wherefore, we have a  $\triangle E * S$ , in which there is given the angles  $E * S = 30''$ , and  $S E * = 6^{\circ}$  ; also the side  $S E =$  radius of the earths orbit (which call 1) ; whence (by *Trig.*)  $\text{fine } \angle E * S$ , or  $\frac{1}{2}$  a second ( $= .00002424068405$ )  $1 : S E (1.) :: \text{fine } \angle S E *$ , or  $60^{\circ}$  ( $= .86602540378$ ) : the required distance  $S * = 357261.124$  times the radius of the earth's orbit, or distance of the earth and sun ; which multiplied by 8 minutes, and reduced, gives the time of the passage of light  $= 5$  years, 158 days, 13 hours, 44 minutes, *2. E. J.*



XIII. PRIZE QUESTION (13.) answered, by Mr. John Dalton, of Kendal.

From the nature of centripetal forces, it will readily appear, that the velocity must be, very nearly, such as would make the ball revolve round the earth in a circle, at its surface, and the time equal to half the periodic time of the same. Now, it is proved by writers on this subject (*vid. Simps. flux. part 1. sect. 12. prop. 6 and coroll.*) that the velocity of a body revolving

ing in a circle, by means of a force attracting it towards the center, or the space described by it, in any small given time (1) is equal to  $\sqrt{sr}$  (where  $s$  represents the measure of the force at the circumference, or twice the space described by a body falling from rest, in the given time (1) and  $r$ , the radius of the circle); also it is proved, that the periodic time of the

same  $= 2 \times 3.1416 \sqrt{\frac{r}{s}}$ . Wherefore, in the present case, we have  $s = 3276$ , and  $r = 21120000$  feet; hence, the required velocity will be 26064 feet, or 4 miles 1648 yards per second; and the time of descending, or half the periodic time  $= 2545.6$  seconds, or 42 minutes and 25.6 seconds.

*Schol.* It may be observed, that as the ball will describe a semicircle, its velocity, in every point of it, will be the same as the initial velocity. Also, that, strictly speaking, if the ball was projected from any considerable distance above the earth's surface its path would be a semi-ellipsis, and the antipodes would be the lower apse, and the place of projection the higher apse of the revolving body, &c. &c.—But this distinction is too nice to have any sensible effect in the present case.

## NEW QUESTIONS to be answered in next Year's DIARY.

### I. QUESTION (14.) By Mr. —.

In what latitude is the shortest day  $\frac{8}{13}$  of the longest day at London?

### II. QUESTION (15.) By Mr. John Needham, of Hinckley.

Unto the world, next year, declare  
The ages of a loving pair,  
 $y$  is the nymph, and  $x$  the swain,  
Which I do ask you to explain.

$$xy = 352, \text{ and } x^2 + y^2 = 900.$$

### III. QUESTION (16.) By Mr. Thomas Adcock, of Ashby-de-la-Zouch.

Near unto me, two lovely maids reside,  
Religion is their chiefest rule, and guide,  
Private devotion, surely never stray,  
To church they go, their adoration pay.

Soft innocence, protects their sweetest sleep,  
 Whilst virtue round them, a sure guard doth keep.  
 Kind algebraists, pray their ages show,  
 From these equations\*, here propos'd below.

$$* \left\{ \begin{array}{l} 4xy - y^2 + x + y = 5992 \\ \frac{x^2 y^2}{7} + x + y = 630092 \end{array} \right\} \begin{array}{l} x = \text{the age of the youngest.} \\ y = \text{the age of the eldest.} \end{array}$$

IV. QUESTION (17.) *By Mr. Will. Marsden, Netherhurst.*

Happening to survey two pieces of land in the form of a square and an equal-sided triangle, I found their compass round was equal, and their areas in proportion, in chains as 1 to .7698; also the product of their areas = 6561 : required each of their dimensions and content.

V. QUESTION (18.) *By Mr. William Swift, of Stow.*

A ship sailed from latitude† express'd † 53° 40' n.  
 On a certain course, between th' north and east,  
 'Till her departure, was miles eighty four,  
 Her ship-masts, all that time, she ne'er did low'r.  
 And after sailing, thirty-four miles well,  
 On the same course, as I before did tell;  
 In latitude\* she was (sure as a gun) \* 55° 20' n.  
 Pray tell her course, likewise her distance run.

VI. QUESTION (19.) *By Mr. Joseph Hall.*

Required the diameter of the greatest semi-circle, that can be inscribed in a square, whose side is 40.

VII. QUESTION (20.) *By Mr. S. Crofs.*

Given, the diagonal of a rectangled parallelogram 60, and the length of a right line, drawn from the right angle, perpendicular to the diagonal, and terminating in the other side of the parallelogram 16; to determine the sides, and area?

VIII. QUESTION (21.) *By Mr. Joseph Hall.*

A gentleman was indebted to two persons, A and B, whom he owed an equal sum of money, which he discharged as follows; to A, he paid 8l. the first payment, 12l. the second, 16l. the third, and so continued increasing 4l. every payment. Now B, at his first payment, received but 1l. the second 4l. the

the third *gl.* increasing, according to the square of the number of payments; quere, what he owed each person, and the number of payments to discharge the debt?

IX. QUESTION (22.) *By Mr. Joseph Peet, of Nottingham.*

In the latitude of 30, and 50 degrees north, on the same meridian, and on the 21st of June in the morning, it is proposed to determine the time, when the altitude of the sun will be equal (if observed) at each place?

X. QUESTION (23.) *By Astronomicus.*

To what height must a person be raised, from the city of London, on the 21st of June at midnight, to see the sun's upper limb; the radius of the earth being 4000 miles?

XI. QUESTION (24.) *By Mr. P. Rowland.*

A maltster proposes to have a circular cistern made of lead, that will contain ten quarters of grain, the thickness of the lead three-tenths of an inch; he desires to know the diameter, and depth, when they are such that the cistern will cost the least money possible?

XII. QUESTION (25.) *By the same.*

A person has a round piece of tapering timber, the diameter at the greater end five feet, at the lesser end two feet, and the length, measured on the outside, eighteen feet; he desires to know where he must cut the same into two parts, such, that if measured by the customary method, it will come to the most money possible?

XIII. QUESTION (26.) *By Mr. William Marsden.*

The different seconds, in music harmonic,  
Are frequently found, in degree diatonic;  
The best method, how each of these seconds are found,  
And, also their true ratio, be pleas'd to expound.

XIV. QUESTION (27.) *By Mr. S. Cross, Nottingham.*

The absolute force acquired by a ball of half a pound weight, freely descending from rest, to the surface of the earth, is  
to

to the force by which, a ball of five pounds weight, endeavours to fly off, when whirl'd about in a sling (whose length is four feet, and time of revolution  $\frac{1}{8}$  of the time of the descending body in falling to the earth) as eight to three; required the space descended, by the falling body, and the force of each?

XV. QUESTION (28.) *By Mr. S. Cross.*

Let a given cylinder of copper (whose diametar is 10 inches, and length  $4\frac{1}{8}$  feet) be sustained alternately in one point, by two supporters, one in a direction perpendicular to it, and the other in a perpendicular direction to the horizon, and at a given horizontal distance (eight inches) from its base; to find to what degree of elevation, the said cylinder must be raised, so that the difference of the pressures upon the supports, in each direction, may be the greatest possible; and also, to determine their lengths, with the respective pressure upon each?

XVI. PRIZE QUESTION (29.) *By Mechanics Frozen.*

*As no solution was sent to the 12th Question in last year's Diary, it is here republished, as the Prize Question for this year; and whoever answers it before the first of May, has a chance for twelve Diaries.*

Suppose a cylindric vessel, whose diameter is 12 inches and and depth 20, was filled with water, and connected to a cord hanging over a pulley kept in equilibrium by a weight appended at the other end of the cord, and that a hole, of one inch diameter, was instantly made in the bottom of the vessel; required the space, through which, the vessel will be drawn up by the weight, when half the water is run out, the vessel and cord being considered as without weight, and to move freely?

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The PRIZES for the several solutions have been determined by lot as follows: First, for the prize question, to *Mr. John Dalton*, of Kendal, eight Diaries. Secondly, for the prize enigma, to *Mr. John Smith*, of Garthorp, near Melton-Mowbray, six Diaries. Thirdly, for the general answer to the enigmas, to *Mr. J. Burr*, of Digby, near Sleaford, ten Diaries. Fourthly, for rebuses, &c. to *Mr. William Swift*, of Stow, six Diaries. All of whom will please to send for them to Messrs. PEARSON and ROLLASON, Printers, in Birmingham.

The

The number of prizes are five, to be determined by lot, viz. One of six *Diaries* for the solution of the prize enigma. Two of six *Diaries* each, for the general solutions of the enigmas. One of six *Diaries* for the most and best answers to the rebuses, charades, &c. Also, one of twelve *Diaries* for the solution of the prize question.

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*The Authors returns unfeigned thanks to all their kind contributors, still intreating the continuance of their favours, and that they will always send solutions at large to whatever they propose, whether in the mathematical, or the poetical way.*

*All letters for the use of this Diary are desired to be directed thus, "For John Gotes and George Taylor, to be left with Mr. Joseph Peet, High-pavement, Nottingham" (post-paid) to come to hand by the first of May.*

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